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A QUICK REFERENCE MANUAL FOR DATA COMMUNICATIONS AND  
FILE MANAGEMENT(U) CONSTRUCTION ENGINEERING RESEARCH  
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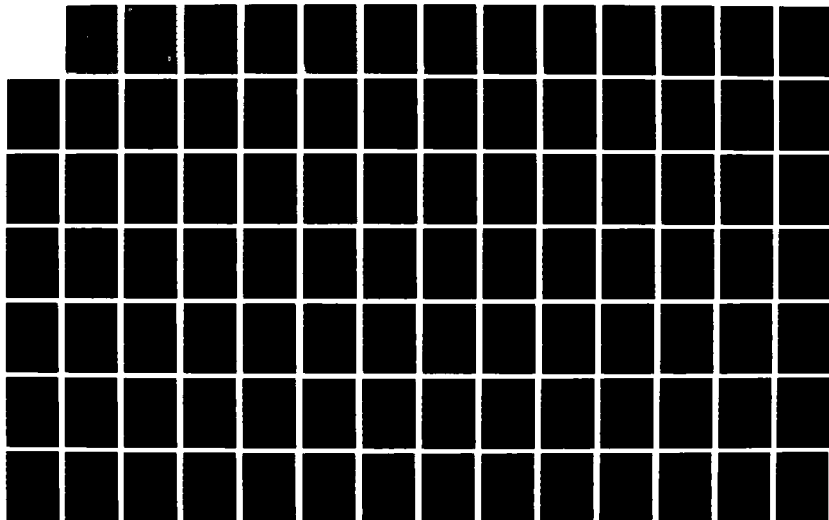
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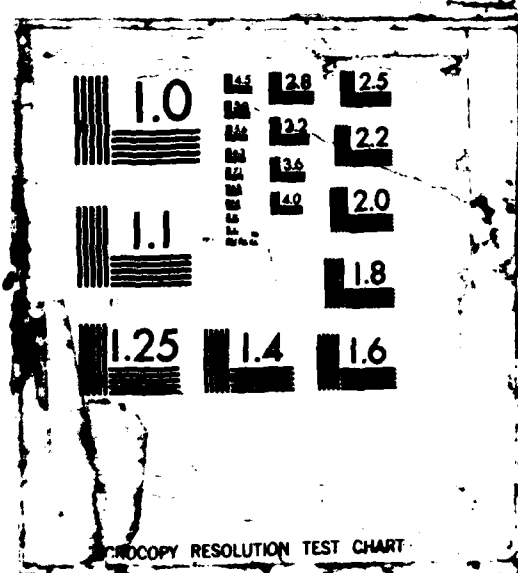
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**US Army Corps  
of Engineers**

Construction Engineering  
Research Laboratory

USA-CERL Special Report P-87/09  
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# **A Quick Reference Manual for Data Communications and File Management**

by  
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Sandra Kappes  
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A collection of microcomputer-based file management and data communication procedures is provided to help users transfer data between applications within a microcomputer environment and between a microcomputer environment and mainframe applications. Each procedure summarizes possible applications and gives step-by-step instructions for implementation. Example applications are given where available.

This manual is based on collective experience of the U.S. Army Construction Engineering Research Laboratory Facility Systems Division (USA-CERL-FS) researchers. Thus, only a limited number of potential applications are covered for microcomputer operations and micro-PAX interface. Users with additional or alternative procedures are encouraged to contact USA-CERL-FS, Dr. Ilker Adiguzel or Dr. Simon Kim, COMM (217) 352-6511, FTS 958-7516/7269, toll-free 800-USA-CERL outside Illinois, 800-252-7122 within the state, PAX ID: DTMO.

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## FOREWORD

This work was performed for the Office of the Assistant Chief of Engineers (OACE), Headquarters, U.S. Army Corps of Engineers (HQUSACE), as part of the Data Traffic Management System project, Order Number E8786L206, dated 30 May 1986. The HQUSACE Technical Monitor was John Sheehey III, DAEN-ZCP-M.

The U.S. Army Construction Engineering Research Laboratory Facility Systems Division (USA-CERL-FS) conducted this project. Information gathered in the investigation reflects the collective experience of researchers in two teams within USA-CERL-FS--the Military Programs Analysis Team and the Construction Management Team. This document is intended to be updated at regular intervals to provide the user with state-of-the-art procedures for managing data communications and files.

Mr. E. A. Lotz is Chief, USA-CERL-FS. COL N. C. Hintz is Commander and Director of USA-CERL, and Dr. L. R. Shaffer is Technical Director.

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## INTRODUCTION

This manual is a collection of microcomputer-based file management data communication procedures to help users transfer data between applications within a microcomputer environment and between a microcomputer environment and mainframe applications. Each procedure includes a synopsis of applications and step-by-step instructions. Where available, examples of each application also are included.

The manual is organized to be flexible. It consists of several forms that can be replaced, appended, or deleted. New sections and forms can be inserted easily.

Section I describes procedures for file format conversions. Section II describes ways to access the PAX system using different communications packages. Section III explains how files prepared in microcomputer environment can be uploaded to the PAX mainframe environment. Section IV shows procedures for downloading files from PAX to the microcomputer. Section V contains some useful operations that can be performed within the PAX environment. Section VI explains procedures for microcomputer-assisted DD Form 1391 processing. Appendix A contains a software index. A user can determine what type of operations can be performed based on the available software packages. Finally, Appendix B gives an overview of microcomputer components, which may assist users in improving their workstation environments.

Information in this manual has been compiled through USA-CERL-FS researchers' collective experience with microcomputer operations and micro-PAX interface applications. As such, only a limited number of potential applications are covered. Users who have developed their own procedures not covered herein or who have better alternative methods are encouraged to contact USA-CERL-FS for possible inclusion of those procedures in the future editions of this manual. Points of contact (POCs) for general questions are Dr. Ilker Adiguzel and Dr. Simon Kim, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516/7269, toll-free 800-USA-CERL (800-252-7122 inside Illinois), PAX ID: DTMO. Questions about specific procedures described in this manual should be directed to the POC listed in each form.

**SECTION I.**  
**FILE FORMAT CONVERSIONS**

## DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL

### **Form 1. Converting LOTUS 123 SpreadSheet Files to ASCII\* Format**

#### **1. SYNOPSIS:**

- Save the LOTUS 123 SpreadSheet file.
- Convert it to ASCII format.
- Save the file in ASCII format.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, LOTUS 123.

**4. HARDWARE REQUIRED:** NA.\*\*

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Save your workfile in LOTUS 123 SpreadSheet (SS) format (it will have a .WKS suffix).
- Enter 123 and retrieve your SS file, if necessary.
- First select the SS "PRINT" option and then "FILE" suboption when asked to choose either "PRINTER" or "FILE."
- Enter a name for the converted file and specify the range to be converted; default is ALL.
- Then select "GO" for execution. At this point, a duplicate file is created in ASCII format with .PRN suffix from your file in SpreadSheet format with .WKS suffix. Your LOTUS directory now has both versions.

#### **6. EXAMPLES/PROGRAMS/NOTES:**

#### **7. TROUBLESHOOTING:**

**8. ADDITIONAL REFERENCE:** *Lotus 123 User Manual.*

---

\*ASCII = American Standard Code for Information Interchange.

\*\*NA = not applicable.

## **DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL**

### **Form 2. Converting WordPerfect Word Processing Files to ASCII Format**

#### **1. SYNOPSIS:**

- Create/retrieve a WordPerfect word processing file.
- Convert it to ASCII format.
- Save the file in ASCII format.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, WordPerfect.

**4. HARDWARE REQUIRED:** NA.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Enter WordPerfect (WP). Either create a workfile or retrieve the word processing file that you saved previously.
- Press Ctrl/F5 to get the WP Document Conversion and Locking menu. Select Option 1 (Save Current Document as a DOS File). When prompted, enter a unique file name for your DOS (ASCII) file. Press ENTER. You will be returned to the word processing environment.
- If your current document is a previously saved WP file, upon exiting WP, you will have both versions of the file in your directory--one in WP and the other in ASCII format.
- If you just created the file, you have the option of saving it in WP format as well (ASCII format version is already saved). However, if you want to do this step only for possible future editing, it is not needed. Next time, you can enter WP, press Ctrl/F5, and select Option 2 (Retrieve a DOS Text File).

#### **6. EXAMPLES/PROGRAMS/NOTES:**

#### **7. TROUBLESHOOTING:**

**8. ADDITIONAL REFERENCE:** *WordPerfect User's Manual.*

## DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL

### **Form 3. Converting an ASCII Data Base to DIF\* Using PC/FOCUS**

#### **1. SYNOPSIS:**

- FOCUS master file description and data file required.
- Create a PC/FOCUS Focexec program to convert the data.
- Run the Focexec program to create the DIF data file.

**2. POC:** Roger Day, USA-CERL-FS, COMM (217) 373-6725, FTS 958-7725, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, PC/FOCUS.

**4. HARDWARE REQUIRED:** NA.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Ensure that both the master file description, MINE.MAS, and the data file, MINE.FTM, exist in the PC/FOCUS directory.
- Write a short program using PC/FOCUS, DOS, or any word processing software that can create an ASCII format file. The name of the file must have a .FEX extension, i.e., CONVERT.FEX. See the sample program in part 6 below.
- Within PC/FOCUS, issue the command EX CONVERT. The file named by the Focexec will now exist in the PC/FOCUS directory and will be a single DIF data file such as NEWFILE.DIF. There will be no corresponding converted master file.

#### **6. EXAMPLES/PROGRAMS/NOTES:**

The source of the master and data files you are converting to DIF could have been created by using PC/FOCUS alone to build a master file description and input the required data; or, the files could have been downloaded from CAPCES using PC/FOCUS. The mainframe Focexec creating the two files if they were downloaded would have ended with a statement similar to:

ON TABLE PCHOLD AS MINE

---

\*DIF = Data Interchange Format.

## **DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL**

The contents of CONVERT.FEX that you must write are:

```
TABLE FILE MINE
PRINT FIELD1 FIELD2 FIELD3 FIELD4 FIELD5 FIELD6 FIELD7 FIELD8
FIELD9 FIELD10
AFTER TABLE HOLD AS NEWFILE FORMAT DIF
END
```

Any IF or BY conditions that created the file being converted need not be restated in the .FEX program because data in the file are now ordered correctly and only data meeting the mainframe IF conditions are in the file. However, you could add different IF or BY conditions in the .FEX program if you wanted to further sort the file or you could omit the names of fields that you did not want to include in the DIF file.

Now that you have a DIF file, there are several graphics packages available that can read the file. Also, you can now convert the file using LOTUS 123 so that you can display the data in a spreadsheet format. To do so, use the LOTUS Files Convert option.

**7. TROUBLESHOOTING:** Make sure that: (1) enough disk space exists for the new DIF file you are creating, (2) your machine has enough memory for the file to be converted, and (3) both the data file and the master file descriptions are in the PC/FOCUS directory.

**8. ADDITIONAL REFERENCES:** *PC/FOCUS Guide to Operations, LOTUS 123 User Manual.*

## **DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL**

### **Form 4. Creating an ASCII File Using Wordstar**

#### **1. SYNOPSIS:**

- Types of Wordstar files.
- Create and edit a Wordstar ASCII file.

**2. POC:** Sandra Kappes, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7542, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** Wordstar.

**4. HARDWARE REQUIRED:** NA.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Two types of files can be created using Wordstar--document or nondocument. Document files contain special characters to indicate functions such as paragraphing, word wrap, and underlining. Nondocument files are ASCII files containing no special characters.
- To create a nondocument file, choose "N" for nondocument from the main menu. The file must always be edited within the nondocument mode.
- If a file has been created using the document mode, there is no simple way to convert it to a nondocument file within Wordstar.

#### **6. EXAMPLES/PROGRAMS/NOTES:**

#### **7. TROUBLESHOOTING:**

**8. ADDITIONAL REFERENCE:** *Wordstar User Manual*.



## **DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL**

### **Form 5. Saving an ENABLE File in ASCII Format**

#### **1. SYNOPSIS:**

- Create/retrieve an ENABLE word processing file.
- Save the file in ASCII format.

**2. POC:** Roger Day, USA-CERL-FS, COMM (217) 373-6725, FTS 958-7725, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, ENABLE.

**4. HARDWARE REQUIRED:** NA.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Enter ENABLE. Choose the "Word Processing" option. Then select the "Create" suboption if you are creating a file or the "Revise" suboption if you are retrieving a previously saved file.
- Work on your file as needed. When you are done, press ALT/F10 to save the file. When prompted, sequentially select "Change Options," "ASCII," and "Entire File."
- If you started the process by retrieving a file and want to save a duplicate of the file in ENABLE word processing format, choose the option of assigning a different name to the ASCII version of the file before leaving the workfile (see part 6 below).
- If you need to work on the file later, ENABLE will tell you that it is in ASCII format. You should select "Change Options" to save the file in ASCII format again.

**6. EXAMPLES/PROGRAMS/NOTES:** When you select Change Options and save a file which you have created in ASCII format using ENABLE, ENABLE will put a .WPF extension on the file name. If you do not want this to happen, enter the file name you wish to assign with a dot (period) after the name and no extension or enter your own extension. For example:

FILENAME.            or    FILENAME.ASC

## **DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL**

If you let ENABLE put the .WPF extension on the file, you have no way of knowing that it is in a different format when you later retrieve it or copy it to a diskette to give to someone.

**7. TROUBLESHOOTING:** If you are trying to revise an existing ASCII file that has no extension, you must enter the file name followed by a dot (period) or ENABLE will not be able to find the file.

If you do not remember the name of a file that has no extension, choose Use System, Word Processing, Revise, and enter \*.\* to select from the directory.

**8. ADDITIONAL REFERENCE:** *ENABLE Documentation.*

## **DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL**

### **Form 6. Using LOTUS 123 and PC/FOCUS to Create Graphs on CAPCES Data**

#### **1. SYNOPSIS:**

- Download CAPCES data using PC/FOCUS.
- Use PC/FOCUS TableTalk option for creating a report and saving it in LOTUS format.
- Retrieve the report from LOTUS 123 and create graphs.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, PC/FOCUS, and LOTUS 123.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Download the relevant CAPCES data fields using Option 1 of the instructions in "Downloading CAPCES Data Using PC/FOCUS." This procedure is preferred over downloading the CAPCES data directly in LOTUS format (Option 3) because Option 3 takes longer to download.
- While in PC/FOCUS, type TABLETALK at the ">>" prompt. Follow the steps in TableTalk to create your report from the downloaded data. At the final step, select the "Retrieve the Data in LOTUS Format" option, which will hold the report in a file called HOLD.PRN and exit PC/FOCUS.
- Get into LOTUS 123 Spreadsheet and select the FILE option. Within the FILE option, first select the DIRECTORY option and change the directory name from LOTUS to PCFOCUS. Again select FILE and then the IMPORT suboption. Select NUMBERS to retrieve the file as numbers recognizable by LOTUS. At the FILE NAME? prompt, either enter HOLD or move the cursor over HOLD under the names of the existing files and press ENTER.
- Now you have your file HOLD imported from PC/FOCUS to LOTUS 123 SpreadSheet. Select the GRAPH option and continue with the normal procedure of creating graphs, bar charts, etc., within LOTUS.
- If you want to save the report file in LOTUS, first change the directory back to LOTUS, and then use the SpreadSheet SAVE option. The report file will be saved as a SpreadSheet file with a .WKS suffix.

## DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL

**6. EXAMPLES/PROGRAMS/NOTES:**

**7. TROUBLESHOOTING:**

**8. ADDITIONAL REFERENCES:** *PC/FOCUS Guide to Operations, LOTUS 123 User Manual.*

**SECTION II.**  
**COMMUNICATIONS**

## DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL

### **Form 7. Setting up CROSSTALK and CROSSTALK Scripts**

#### **1. SYNOPSIS:**

- Prepare the CROSSTALK (sometimes abbreviated as XTALK) package for the system.
- Set a CROSSTALK script file to connect to a host system.

**2. POC:** Michael McCulley, USA-CERL-FS, COMM (217) 373-6728, FTS 958-7728, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, CROSSTALK XVI.

**4. HARDWARE REQUIRED:** N/A.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

##### *Setting up a Working Copy of CROSSTALK*

- Hard disk: copy the contents of the CROSSTALK disk into a directory such as COM (Communications).
- Floppy disk: format a working diskette using the DOS FORMAT command. Use the /S option to copy DOS onto the new diskette. For example, if you wish to format a diskette in drive B:, enter the following command:

**FORMAT B:/S**

Now place your newly formatted diskette in drive A: and place the original CROSSTALK diskette in drive B:. At the DOS prompt "A", enter the command:

**COPY B:\*.\***

This procedure will copy all files from drive B into drive A. After the copying is complete, remove the original CROSSTALK diskette and file it in a safe place.

##### *Setting up System Parameters*

- At the MS-DOS prompt, type "xtalk". The CROSSTALK Status Screen will appear.
- After the prompt "Enter Number for File to Use:", enter the appropriate number for SETUP (most likely 2). Otherwise, after the "Command?" prompt, enter LO SETUP for the load setup program. The SETUP routine will help you answer the following questions.

## **DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL**

- CROSSTALK must know to which communication (COM) port the modem is connected. Although there are usually four COM options, connection usually is to COM1 or COM2. CROSSTALK will be able to spot a port that does not exist.
- Enter the baud rate of your system when prompted. Most systems today are using 1200- or 300-baud modems.
- Enter the modem type from the displayed list.
- Enter the display type from the list of choices.
- Save the default settings by typing Y (yes) after the prompt.
- If you are running CROSSTALK on an IBM PCjr enter Y (yes) after the prompt. Otherwise type N (no).
- You are now finished configuring CROSSTALK to your system. This is the only time that this step will have to be done.

**6. EXAMPLES/PROGRAMS/NOTES:** A script file can be used to help with login procedures. The script file is executed after connection with the host system has been established. The file is written in CROSSTALK's own language. Many useful commands can be executed within the script file. Refer to Form 11 in this section for a sample script file to connect to the PAX system.

### **7. TROUBLESHOOTING:**

### **8. ADDITIONAL REFERENCE: *CROSSTALK User's Manual***

## DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL

### **Form 8. Setting up Tym/COMM and Tym/COMM Procedure Files**

#### **1. SYNOPSIS:**

- Prepare the Tym/COMM package for the system.
- Set a Tym/COMM procedure file to connect with the host system.

**2. POC:** Michael McCulley, USA-CERL-FS, COMM (217) 373-6728, FTS 958-7728, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, Tym/COMM 3.0.

**4. HARDWARE REQUIRED:** NA.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

##### *Setting up a Working Copy of Tym/COMM*

- Hard disk: copy the contents of the Tym/COMM disk into a directory such as COM (Communications).
- Floppy disk: format a new diskette using the DOS FORMAT command. Use the /S option to copy DOS onto the new diskette. For example, if you wish to format a diskette in drive B:, enter the command:

**FORMAT B:/S**

Now place your newly formatted diskette in drive A: and place the original Tym/COMM diskette in drive B:. From the DOS "A" prompt, enter the command:

**COPY B:\*,\***

This procedure will copy all files from drive B into drive A. After the copying is complete, remove the original Tym/COMM diskette and file it in a safe place.

##### *Creating a Working Copy of Tym/COMM*

- First type the command "TYMCOMM" followed by parameters a through g below on the same line. The format for all parameters is a "/" followed by the variable name, then a colon, and finally the option that suits your needs.



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- a. Enter the name of the working copy, followed by the start-up option /G. For example, to name the working copy NEWCOMM, the command would be:

TYMCOMM NEWCOMM/G

Then the options you select would follow.

- b. Tym/COMM must know to which communication (COM) port the modem is connected. First type a "/", then the port; for example, /com& where & is replaced by 1 or 2.
- c. Tym/COMM needs to know the baud rate of your modem. The parameter name is "b"; type /b:nnnn, replacing nnnn with the baud rate you want to use.
- d. Tym/COMM can also start up a procedure file from this command. The procedure file must be named proc\*.tym where \* is a number from 0 to 9. The command to start the procedure would be /p:\*. Several sample procedure files will appear on the Tym/COMM diskette and these can be used.
- e. More options are available; review the *Tym/COMM Manual* for instructions on their usage.
- f. Since Tym/COMM does not know what type of modem that you are using, it is necessary to use modem commands within Tym/COMM. For example, if a Hayes modem is being used, the "AT" commands found in the user's manual must be executed. It is convenient to put the modem commands in a procedure file.
- g. A simple procedure file that uses the \$dial variable is sample3.tym. The \$dial variable is used by including the /d: option followed by the telephone number. This procedure file also includes the Hayes AT command set. To use this procedure file, the name must be changed to a proc\*.tym format, where \* is a number between 0 and 9. The complete command line to execute this procedure in a working copy called NEWCOMM would be:

TYMCOMM NEWCOMM/G/com&/d:(phone number)/p:\*/b:nnnn.

- \*\* Log in using \$dial variable.
- \* When you start Tym/COMM, use the start-up option /D:string,
- \* where string is a telephone number.
- \* Default settings are used for COUNT (3) and TIMEOUT (60).

```
PERMON "NO CARRIER" GOTO -AGAIN
ON TIMEOUT GOTO -GIVEUP
ON COUNT GOTO -GIVEUP
```

```
-AGAIN
SEND "AT X6 DP ",$dial
```

```
II-4
COUNT
MATCH "CONNECT"
```

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```
MATCH "-----"
SEND "A",
MATCH "please log in:"
* Replace user name with your user name.
SEND "user name;",
WAIT 2
ECHO OFF
* Replace password with your password.
SEND "password;",
END "Logged in"

-GIVEUP
ECHO INLINE
SHOW "Log in failed"
DROP-DTR-EXIT
```

**6. EXAMPLES/PROGRAMS/NOTES:** A procedure file will simplify the login process. Many useful commands can be executed from within a procedure file. Refer to Form 12 in this section for a sample script file to connect with the PAX system.

**7. TROUBLESHOOTING:**

**8. ADDITIONAL REFERENCES:** *Tym/COMM User's Guide*, your modem's user manual.

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### **Form 9. Creating an ENABLE Teleprocessing Setup for PAX**

#### **1. SYNOPSIS:**

- Enter the setup mode.
- Set communication parameters.
- Save the setup.

**2. POC:** Roger Day, USA-CERL/FS, COMM (217) 373-6725, FTS 958-7725, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, ENABLE.

**4. HARDWARE REQUIRED:** NA.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- From the ENABLE main menu, select the Use System, Telecom, and Setup options. An instruction screen will appear which you can review. Press any key to proceed.
- Next, enter a name for the Setup. You will be able to revise it, if necessary, using the same method.
- Here are the recommended parameters. Some of the answers shown are for example only. Use the numbers or responses for your situation.

#### **PROMPT:**

Special digits?  
Number for outside line?  
Use alternative phone system?  
Use a network?  
Which network?  
Enter the phone number  
Enter terminal identifier  
Enter connection address  
Use autodial modem  
Type of automatic dial  
Baud rate  
Options  
Type of duplex  
Transmission delay

#### **SELECT:**

Yes or No  
e.g., 9  
No  
Yes  
2-Tymnet  
(your number) e.g., 555-1234  
A  
(leave blank)  
Yes  
Tone  
4=1200  
1  
Full  
0

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Support Xon / Xoff?	Yes
Password or first response	(your ID) e.g., MYOWNID
Second response	(your password) e.g., PASS.WORD
See cost?	No
See connection time?	No
COMM PORT to use?	COMM2 or COMM1
Setup to use if this one fails?	(leave blank)
Terminal emulation?	No
Options?	No

- Now press the F10 key and select Save to save your Setup. Next, press the F10 key and select Quit and Yes to return to the ENABLE main menu. From there you can try the Setup you've created by selecting Use System, Telecom, Communicate, and Use Setup. Then follow the prompts.

**6. EXAMPLES/PROGRAMS/NOTES:** If you don't want to put your ID and password in the Setup, simply leave those prompts blank. You can enter them when you are connected.

**7. TROUBLESHOOTING:** If no dial tone occurs, be sure the telephone line is connected to your modem. If you encounter "line garbage" at 1200 baud, change the Setup to 300 baud.

If the message "Modem Not Responding" occurs when you try to use the Setup, change the Setup to a different COMM port. For example, if you had set COMM2, change to COMM1.

You must start ENABLE with a ,B parameter when you are connecting to a computer using full duplex. An example of the startup command is:

ENABLE (,,,C:\MYDIR),B

Some early versions of ENABLE do not recognize the ,B parameter and will not upload successfully.

**8. ADDITIONAL REFERENCE:** *ENABLE Documentation.*

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### **Form 10. Connecting to PAX Using SMARTCOM II**

#### **1. SYNOPSIS:**

- Connect to the PAX system host McAuto computer using SMARTCOM II (SCOM).
- Access the PAX system.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, SMARTCOM II.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Assuming that transmission parameters are already set up, enter SCOM and select option "1. Begin Communication."
- When prompted, choose "Originate."
- A communications directory will then appear listing the various systems you may access. If "PAX" is listed as either PAX, McAuto, or TYMSHARE, select the letter that corresponds to it. Otherwise, select "Z - Standard Values" and enter the local telephone number for accessing PAX (this number can be obtained from McAuto Hotline (703) 893-4243 or -4244 if you don't know it).
- After the connection is made, enter your terminal identifier and follow the normal logon procedure.
- After logging off the PAX system, press F1 to return to SCOM and choose option "0. End Communication" to exit SCOM.

**6. EXAMPLES/PROGRAMS/NOTES:** To include PAX in your communications directory, system parameters need to be set up first. Enter SCOM, select option "1. Begin Communication," and choose "O" for originate. When prompted for the label, enter a letter corresponding to an unoccupied spot in the communications directory. Then press F1, select option "2. Edit Set," and choose "P" for parameters when prompted. You will be presented with a screen showing system parameters. Assign a name to your PAX communications setup. Use the up and down arrows to position the cursor at various system parameters. As you press the right and/or left arrow, the available predefined values for a particular parameter will be displayed. Choose the appropriate values (e.g.,

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Duplex: Full, Baud: 1200, etc.) and enter the local PAX access number. Before leaving the screen, record the current values onto the disk by pressing Y (yes) when prompted.

**7. TROUBLESHOOTING:** If there is excessive line noise (recognized by "garbage" characters across your screen) impairing your online operations, log off and dial in again in an attempt to obtain a cleaner line.

If Smartmodem does not dial and issues a message such as "Smartmodem not responding on COM1" or "Smartmodem not responding on COM2," the communications port (to which the modem is connected) is not identified properly. Select SCOM option "6. Change Configuration" and change the current Smartcom port identifier.

If connection to PAX cannot be established after several rings, the communications network node might not be functioning. Call McAuto Hotline.

**8. ADDITIONAL REFERENCE:** *Hayes Smartmodem II Manual.*

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### **Form 11. Connecting to PAX Using CROSSTALK XVI**

#### **1. SYNOPSIS:**

- Set the PAX dial-in sequence.
- Access the PAX system.

**2. POC:** Michael McCulley, USA-CERL-FS, COMM (217) 373-6728, FTS 958-7728, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, CROSSTALK XVI.

**4. HARDWARE REQUIRED:** One of the following modems or compatible:

- IBM Personal Computer modem or IBM 5841 modem
- Hayes Smartmodem (all models)
- DCA 911 modem
- Ven-Tel Modem (all models)
- Rixon PC-212a (internal) or Rixon Executive 212
- Multi-Tech (all models, 1200 and 2400 BPS)
- Bizcomp PC-Intellimodem (internal board)
- Concord Data Systems Autodial 224
- Popcom C100 (internal) or X100 (external)
- Bytecom 212 AD
- General DataComm 212 Intelligent Modem
- AT&T DATAPHONE II (2212C and 2224A & B)
- Lockheed GETEX modem
- IBM PCjr Internal Modem (PCjr only)
- Racal-Vadic 3451 or Auto-dial VA212

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

##### *Setting up the Dialing Procedure for PAX*

- At the MS-DOS prompt, type "xtalk". The CROSSTALK Status Screen will appear.
- After the "Enter Number for File to Be Used:" prompt, enter the number corresponding to NEWUSER. The NEWUSER routine will help you answer the following questions.
- Page through the routine until the prompt "Please Choose a Service:" is displayed. After this prompt, enter "O" for other.

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- Enter the telephone number for the PAX system. If you have to exit your telephone system to reach an outside line, for example, by first dialing 9 then the number, enter the number 9 followed by a comma, then the local PAX access number. Thus, you should type a sequence such as 9,3591163 or 9,359-1163. If you are dialing in from a open line, for example your home, omit the 9. Note: 359-1163 is the PAX number for the USA-CERL area network.
- After the "Enter System Name or Comments:" prompt, enter "Pax Dial-up Sequence" or other meaningful statement. This information will be displayed in the upper left-hand corner of the Status Screen when dialing the PAX.
- Enter the baud rate of the PAX system (usually 1200 baud).
- After the prompt to save this setup, enter Y (yes). The system will then prompt with "Save Settings in What File?" Enter PAX. This information will be displayed on the Status Screen for one of the choices to call when you enter XTALK.
- You now have the option of calling the PAX system or exiting the NEWUSER routine. If you choose to exit, it will be necessary to page through to the "Choose a Service" prompt, whereupon entering X for exit will bring you back to the System Status Screen. The new PAX command file will be displayed on this screen. The System Status Screen will display all the dial-in defaults. It may be necessary to adjust the DUpIex from half to full (see 7. **Troubleshooting** below).

### *Dial-in Procedure*

- The Status Screen usually will have two prompts: "Enter Number for File to Use:" and "Command?". You can proceed from the "Enter" prompt to the "Command?" prompt by entering no number. You can return to the "Enter" prompt by executing LO (load). Many other CROSSTALK commands are available and can be executed from the "Command?" prompt. A list of available commands can be displayed by typing "help" after the "Command?" prompt (also see the *CROSSTALK User's Manual*).
- To dial-up PAX, enter the number corresponding to the PAX file after the "Enter" prompt. Or, after the "Command?" prompt, enter "LO PAX". The system will execute the dial-in procedure.
- Once connected, log in to the PAX system the usual way.

### *Exiting CROSSTALK*

- You must be at the "Command?" prompt to exit CROSSTALK. This requirement usually is no problem. On the bottom line of the screen, a choice of two keys is listed; pressing either key will get the attention of CROSSTALK. The HOME key normally puts you back into the System Status Screen after being depressed once again. Otherwise, the Esc key sets the command prompt at the bottom of the working screen.



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- After the "Command?" prompt, your call can be terminated in two ways:

BY (bye)--hangs up the modem and keeps you in CROSSTALK.

QU (quit)--hangs up the modem and exits CROSSTALK.

**6. EXAMPLES/PROGRAMS/NOTES:** A script file can be used to help login procedures. The script file is executed after the connection with the PAX system has been established. The following script file responds with a control-a to finalize the connection procedure with the PAX dial-in line. The file then waits for the login prompt. Upon this prompt, CROSSTALK requests the login name, then the password. When the correct login name and password have been entered, the script file terminates and normal system functions are returned. The script file is:

```
; CROSSTALK script file to connect to the PAX
; waits for system to respond and echos a control-a

wait delay 200
reply ^a|

; Waits for login request, and continues till correct
; in loop begin

wait string "please log in:"
LABEL begin
alarm 3 now
Ask @c8 Please ENTER system login name:
reply @c8|
wait delay 5
when "user name:" jump begin

; Waits for password request, and continues till correct
; in loop pbegin

wait string "password:"
LABEL pbegin
alarm 3 now
Ask @c8 Please ENTER user Password:
reply @c8|

; copy over the password for security purposes
FK c8 Hello
wait delay 5
when "type password:" jump pbegin
; otherwise continue on and terminate after small delay
wait delay 15
alarm 8 now
end
```

**7. TROUBLESHOOTING:** As mentioned earlier, it may be necessary to toggle the duplex mode if the characters are echoing incorrectly. This can be done without logging off the PAX system. Return to the System Status Screen. Under the heading Communication

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Parameters, you will see the DUplex heading. To alter the DUplex setting, type DU after the "Command?" prompt. CROSSTALK will prompt you with the possible settings. Enter the appropriate setting and press return. The System Status Screen should now be set to this setting. This change can be saved permanently in the PAX command file by typing "save PAX".

If the wrong communications port has been chosen, it will be necessary to change the PORT number on the System Status Screen. This situation will be evident when CROSSTALK acts as if it is attempting to connect to a remote line, but nothing happens. If you have a modem that echoes the calling procedure, this problem will be immediately obvious because no dialing will occur. Otherwise, you can monitor the outgoing call. To change the PORT number, load the STD file and type PO. Respond with the appropriate port number, then save the file by typing SAVE STD. It will be necessary to change the port number in your PAX file as well. Load the PAX file and terminate the calling procedure by typing Esc for attention. Once the calling procedure is terminated and you are at the Status Screen, type "PO" once again and supply the appropriate information. Type "SAVE PAX" to save the changes. If this exercise has solved the communications problem, no further action will be required. Otherwise, refer to the *CROSSTALK User's Manual*.

### **8. ADDITIONAL REFERENCE: *CROSSTALK User's Manual***

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### **Form 12. Connecting to PAX Using Tym/COMM 3.0**

#### **1. SYNOPSIS:**

- Set the PAX dial-in sequence.
- Access the PAX system.

**2. POC:** Michael McCulley, USA-CERL-FS, COMM (217) 373-6728, FTS 958-7728, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, Tym/COMM 3.0.

**4. HARDWARE REQUIRED:** See modems listed under **Form 11. Connecting to PAX Using CROSSTALK XVI.**

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

##### *Setting up the Dialing Procedure for PAX*

- First, a working copy should be implemented as described in **Form 8. Setting up Tym/COMM and Tym/COMM Procedure Files.**
- Include the telephone number for the PAX system in the dial variable. If you must exit your telephone system to reach an outside line, for example, by first dialing 9, then the local PAX access number, type the telephone number this way: 9,3591163. If you are dialing from an open line, omit the "9,". Note: 359-1163 is the PAX number for the USA-CERL area LAN.

##### *Using a Procedure File to Automate the Login Process*

- A procedure file is composed of Tym/COMM procedure statements. These statements can be found in the *Tym/COMM User's Guide*, Section 3. To create a procedure file, use any text editor to store the procedure statements in a PC file. You can use any combination of capital and lowercase letters, except in strings. Each procedure statement must be entered on a separate line. A procedure file can have any valid DOS file name. However, as discussed earlier under Form 8, a procedure file named in the proc\*.tym format can be started in your working copy. The procedure file can simply log you on to PAX or it can be written to assist with more complex tasks such as file transfers or PAXMAIL. Part 6 below shows an example of a simple procedure file.

**6. EXAMPLES/PROGRAMS/NOTES:** The following procedure file can be used to logon to the PAX system when the working copy contains the \$dial variable with the PAX telephone number.

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\*\*\*\*\* TYM/COM PROGRAM TO DIAL UP \*\*\*\*\*  
\*\*\*\*\*THE PAX SYSTEM\*\*\*\*\*  
\*\*\*\*\* THIS PROGRAM IS FOR A HAYES MODEM OPERATING AT 1200 BAUD RATE  
\*\*\*\* SET THE HAYES MODEM TO 1200 BAUD RATE AND DIAL THE PAX SYSTEM

PERMON "NO CARRIER" GOTO -AGAIN  
ON TIMEOUT GOTO -GIVEUP  
ON COUNT GOTO -GIVEUP

-AGAIN  
SEND "AT H DT", \$DIAL

\* WAIT FOR THE INITIAL MESSAGE FROM THE PAX SYSTEM

MATCH "xxx"

\* SEND TERMINAL IDENTIFIER CHARACTER A, WITHOUT A CARRIAGE RETURN  
SEND "^A"

\* WAIT FOR "PLEASE LOG IN" MESSAGE  
MATCH "please log in"

-GIVEUP INLINE  
SHOW "Log in failed"  
DROP-DTR-EXIT

**7. TROUBLESHOOTING:** If characters are echoing incorrectly, it may be necessary to toggle the duplex mode. Full-duplex is the default communications mode for Tym/COMM. If half-duplex mode is needed, the variable "/H" should be added to your working copy.

If the wrong communication port was chosen, it will be necessary to change the com& variable in your working copy.

If the above suggestions do not solve your problem, consult the *Tym/COMM User's Guide* or call the McDonnell Douglas ISG (formerly Tymshare) Hotline at (202) 893-4243.

**8. ADDITIONAL REFERENCE:** *Tym/COMM User's Guide.*

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### **Form 13. Connecting to PAX Using ENABLE**

#### **1. SYNOPSIS:**

- Set parameters.
- Use the Capture mode as desired.
- Access the PAX system.

**2. POC:** Roger Day, USA-CERL-FS, COMM (217) 373-6725, FTS 958-7725, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, ENABLE.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- From the ENABLE main menu, select Use System, Telecom, Communicate, and Use Setup. Enter the name of the setup you will use or press the "up" arrow to move the cursor to the desired setup, then press enter.
- Enter the filename to which you want to capture text from the screen such as reports, data bases, or electronic mail. If you don't intend to capture text, simply press Enter without entering a name.
- Next, ENABLE will make the connection and indicate the status. ENABLE will enter the A, which is normally your terminal identifier. If you have included your ID and password in the telecommunications setup you are using, ENABLE will display each on the screen. You must press Enter to send each one. Otherwise, type in your ID and password after ENABLE has finished passing the terminal identifier. You are connected to PAX now; proceed as you wish.
- If, at any time during your session, you want to capture text or data, use the F7 key which is a toggle for capture mode. Pressing the Page Up key during your session will let you edit any text you have been capturing. Pressing Shift/F9 will return you to your online session.
- To end your session, select F10, Disconnect, Yes, and then answer Yes or No to indicate whether you want to save any captured data. If you answer Yes, you can save the data under the name shown on the status line or under a different name by selecting Change Options. If you answer No, pressing any key will return you to the ENABLE main menu.

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**6. EXAMPLES/PROGRAMS/NOTES:** Additional help is available under **Form 9. Creating an ENABLE Teleprocessing Setup for PAX.** More recent versions of ENABLE allow you to capture text or files onto a disk. Use the F10 menu while online to open a disk capture file and then close it after the text or file has been printed on the screen. The disk file will be in ASCII format. If you have captured a data base file onto disk, it can be converted to an ENABLE data base by designing and running an ENABLE transfer form. This conversion is done using the ENABLE DBMS copy screen. (Also see the *ENABLE DBMS Manual*.)

**7. TROUBLESHOOTING:** Make sure you have assigned the correct COMM port within the ENABLE telecommunications setup you are using. Also, ensure that telephone line is working correctly.

**8. ADDITIONAL REFERENCE:** *ENABLE Telecommunications Manual.*

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### **Form 14. Connecting to PAX Using PC/FOCUS**

#### **1. SYNOPSIS:**

- Set parameters.
- Issue the dial sequence.

**2. POC:** Sandra Kappes, USA-CERL/FS, COMM (217) 352-6511, FTS 958-7542, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, PC/FOCUS.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Enter PC/FOCUS and, at the PC/FOCUS ">>" prompt, type LINK.
- After the LINK selection menu appears, supply the following parameter values, then press ENTER.

Async Dial:	X
System:	CMS
Baud:	1200
Duplex:	FULL
Parity:	MARK
Stop Bits:	1
Start Bits:	7

- The message HOST SYSTEM CONNECTED should now be displayed indicating that the modem is connected.
- To dial the mainframe, type ATD#,PAX (substituting the appropriate telephone numbers for #,PAX) and press ENTER.

**AT:** The attention code for the Smartmodem. It must be upper case.

**D:** Dial causes Smartmodem to initiate the call.

**#:** Digit used to obtain an outside line. If none is required, omit this plus the Comma.

**PAX:** Your local PAX access number.

- Once the connection is established, sign on to PAX in the usual way.

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### **6. EXAMPLES/PROGRAMS/NOTES:**

- a. Parameters also can be supplied on the *LINK* command line. For example:

**LINK SYSTEM CMS BAUD 1200 DUPLEX FULL PARITY MARK STOP 1 BITS 7 END**

The **END** command must be included to instruct PC/FOCUS to process the command. To eliminate the need to enter this command each time you want to communicate with PAX, you can save it as a focexec file using the PC/FOCUS TED option. For example, if you saved the command in a file named **DIALPAX.FEX** you could invoke it by typing **EX DIALPAX** at the ">>" prompt. The dialing sequence should follow.

- b. While connected to the mainframe, press the F2 key to return to your previous point in PC/FOCUS. To return to the mainframe, press F2 or enter **LINK R** (where R is Resume). Depending on your hardware, you may have to redial, but you will not have to repeat the logon process.

### **7. TROUBLESHOOTING:**

- 8. ADDITIONAL REFERENCE:** *PC/FOCUS Guide to Operations.*



**SECTION III.**

**UPLOADING**

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### **Form 15. Uploading ASCII Files Using SMARTCOM II**

#### **1. SYNOPSIS:**

- Copy files to SMARTCOM II (SCOM) directory.\*
- Connect to PAX using SCOM.
- Upload the file(s) in SCOM directory.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, SMARTCOM II.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Enter SMARTCOM II and copy file(s) to be uploaded onto the SCOM directory from wherever they reside.
- Connect to the PAX system, logon, and choose your application from the PAX menu (usually CAPCES or PAXMAIL).
- If you are using an application other than PAXMAIL, enter CMS edit mode by typing EDIT <filename> <filetype> at a "CMS>" or "C>" prompt. After seeing an "E>" prompt, enter I for input to attain an "I>" prompt.
- If you are using PAXMAIL, choose Option 1 to send a memo and enter all applicable information for the TO, CC, TOPIC, PTY, and SUBJ lines. Upon completion, you will see an "I>" prompt.
- At the "I>" prompt, press F1 to return to the SCOM menu. Select the 5.Send File option from the menu. For selecting the protocol, accept the default option (2.Stop/Start). Then enter the name of the file to be uploaded from the SCOM directory, and press Enter.
- After seeing that uploading is completed, press ENTER to return to the "I>" prompt. Press Enter again to receive the "E>" prompt.
- At the "E>" prompt, type in \$NODS to delete the extra blank lines that occurred during uploading.

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- Type **FILE** to save the uploaded file and to exit the edit mode, or type **QUIT** to exit the editor without saving.
- Repeat the above uploading procedure if more than one file needs to be uploaded.
- Proceed with your online PAX operations.

### **6. EXAMPLES/PROGRAMS/NOTES:**

Example 1. You wrote a FOCEXEC using a word processing package. To upload and execute it: enter CAPCES, type EDIT <filename> FOCEXEC, and follow the above procedure beginning with the "E>" prompt.

Example 2. You have a very long message that you do not want to type manually online: prepare your mail using a word processing package and copy it onto the SCOM directory; initiate a PAXMAIL and follow the above procedure beginning with the "I>" prompt.

**7. TROUBLESHOOTING:** You can upload ASCII files only. Refer to **Section I. File Format Conversions** for help if the file to be uploaded is not in ASCII format.

**8. ADDITIONAL REFERENCE:** *Hayes Smartcom II Manual.*

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### **Form 16. Uploading LOTUS 123 SpreadSheet Files Using SMARTCOM II**

#### **1. SYNOPSIS:**

- Convert from 123 SpreadSheet format to ASCII format.
- Use SMARTCOM II to upload.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, LOTUS 123, and SMARTCOM II.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Follow the instructions under **Form 1. Converting LOTUS 123 SpreadSheet Files to ASCII Format.**
- Enter SMARTCOM II and copy your ASCII file from the LOTUS directory.
- Follow the instructions under **Form 15. Uploading ASCII Files Using SMARTCOM II.**

#### **6. EXAMPLES/PROGRAMS/NOTES:**

#### **7. TROUBLESHOOTING:**

#### **8. ADDITIONAL REFERENCES:**

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### **Form 17. Uploading WordPerfect Word Processing Files Using SMARTCOM II**

#### **1. SYNOPSIS:**

- Convert from WordPerfect format to ASCII format.
- Use SMARTCOM II to upload.

**2. POC:** Ilker Adiguzel, USA-CERL/FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, WordPerfect, and SMARTCOM II.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Follow the instructions under **Form 2. Converting WordPerfect Word Processing Files to ASCII Format.**
- Enter SMARTCOM II and copy your ASCII file from the WordPerfect directory.
- Follow the instructions under **Form 15. Uploading ASCII Files Using SMARTCOM II.**

#### **6. EXAMPLES/PROGRAMS/NOTES:**

#### **7. TROUBLESHOOTING:**

#### **8. ADDITIONAL REFERENCES:**

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### **Form 18. Uploading Wordstar Word Processing Files Using SMARTCOM II**

#### **1. SYNOPSIS:**

- Create ASCII file.
- Use SMARTCOM to upload.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, Wordstar, and SMARTCOM II.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Follow the instructions under **Form 4. Creating an ASCII File Using Wordstar.**
- Enter SMARTCOM II and copy your ASCII file from the Wordstar directory.
- Follow the instructions under **Form 15. Uploading ASCII Files Using SMARTCOM II.**

#### **6. EXAMPLES/PROGRAMS/NOTES:**

#### **7. TROUBLESHOOTING:**

#### **8. ADDITIONAL REFERENCES:**

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### **Form 19. Uploading ASCII Files Using CROSSTALK XVI**

#### **1. SYNOPSIS:**

- Connect to PAX using CROSSTALK (XTALK) Package.
- Transmit data to the PAX system.

**2. POC:** Michael McCulley, USA-CERL-FS, COMM (217) 373-6728, FTS 958-7728, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, CROSSTALK XVI.

**4. HARDWARE REQUIRED:** Modem (e.g., Hayes Smartmodem or compatible).

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- If this is the first time the uploading routine has been used, this step is necessary to prepare CROSSTALK to send data. The following steps will set Function Key 8 to perform the Send command and set the appropriate conditions. It is necessary to trigger the "Command?" prompt in CROSSTALK by striking the ESC key to get ATtention. This is done after loading the PAX dialup file. After the "Command?" prompt reply with "FK 8 @SEND|". It is then necessary to set the BLankex ON. BLankex is a CROSSTALK command that expands blank lines such that the CMS editor will not think they are single blanks--these would exit the user from the CMS editor. This step is accomplished by typing BL ON after the "Command?" prompt. It will then be necessary to save these changes for the future by using the Save command after the "Command?" prompt. Example:

```
"Command? FK 8 @SEND|"  
"Command? BL ON"  
"Command? SAVE PAX.XTK"
```

- It is assumed from this point on that the user has connected with the PAX system and has formatted the disk as described under **Form 11. Connecting to PAX Using CROSSTALK XVI**.
- After you have logged onto the PAX system, choose your application from the PAX system menu (usually CAPCES or PAXMAIL).
- If you are using an application other than PAXMAIL, enter CMS edit mode by typing EDIT <filename> <filetype> at a "CMS>" or "C>" prompt. After seeing an "E>" prompt, enter I for input to attain an "I>" prompt.

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- If you are using PAXMAIL, choose Option 1 to send a memo and enter all applicable information for the TO, CC, TOPIC, PTY, and SUBJ lines. When done with those, you will see an "I>" prompt. The PAX system is now ready to receive data from your terminal.
- Depress Function Key 8. CROSSTALK will now prompt you for the file name to be transferred to the pertinent PAX application.
- CROSSTALK will display the sending action. Upon completion, CROSSTALK will return you to the CMS environment.
- You should now be back in the CMS editor. After the "I>" prompt, respond with a carriage return to leave Input Mode.
- After the "E>" prompt, type FILE to save the uploaded text and exit the CMS editor: or, type QUIT to exit the editor without saving.
- To upload another file, repeat the above steps while in CMS environment.
- Proceed with your online PAX operations.

### **6. EXAMPLES/PROGRAMS/NOTES:**

Example 1. You wrote a FOCEXEC using a word processing package. To upload and execute it: enter CAPCES, type EDIT <filename> FOCEXEC, and follow the above procedure beginning with the "E>" prompt.

Example 2. You have a very long message that you do not want to type manually online: prepare your mail using a word processing package, move it to the XTALK directory, sign on to PAX, initiate PAXMAIL, and follow the above procedure beginning with the "I>" prompt.

Note: CROSSTALK script files can be written to complete this task from a menu-driven system that can be controlled using a mouse or the keyboard. The menu can be as follows:

#### **FILE TRANSFER MENU**

- A. Receive a file from the PAX system.
- B. Send a file to the PAX system.
- C. List files on the PAX system.
- D. List files on your system.
- E. Delete a file on the PAX system.
- F. Display a file on the PAX system.
- G. Exit script and return to CMS.
- H. Exit PAX system and return to MS-DOS.

**7. TROUBLESHOOTING:** You can upload ASCII files only. Refer to **SECTION I. FILE FORMAT CONVERSIONS** for help if the file(s) to be uploaded is not in ASCII format.



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**8. ADDITIONAL REFERENCES:** *CROSSTALK Users Manual, CMS Editing Environment User's Guide.*

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### **Form 20. Uploading LOTUS 123 SpreadSheet Files Using CROSSTALK XVI**

#### **1. SYNOPSIS:**

- Convert from 123 SpreadSheet format to ASCII format.
- Use CROSSTALK XVI to upload.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, LOTUS 123, and CROSSTALK XVI.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Follow the instructions under **Form 1. Converting LOTUS 123 SpreadSheet Files to ASCII Format.**
- Enter CROSSTALK XVI and copy your ASCII file from the LOTUS directory.
- Follow the instructions under **Form 19. Uploading ASCII Files Using CROSSTALK XVI.**

#### **6. EXAMPLES/PROGRAMS/NOTES:**

#### **7. TROUBLESHOOTING:**

#### **8. ADDITIONAL REFERENCES:**

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### **Form 21. Uploading WordPerfect Word Processing Files Using CROSSTALK XVI**

#### **1. SYNOPSIS:**

- Convert from WordPerfect to ASCII format.
- Use CROSSTALK XVI to upload.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, WordPerfect, and CROSSTALK XVI.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Follow the instructions under **Form 2. Converting WordPerfect Word Processing Files to ASCII Format.**
- Enter CROSSTALK XVI and copy your ASCII file from the WordPerfect directory.
- Follow the instructions under **Form 19. Uploading ASCII Files Using CROSSTALK XVI.**

#### **6. EXAMPLES/PROGRAMS/NOTES:**

#### **7. TROUBLESHOOTING:**

#### **8. ADDITIONAL REFERENCES:**

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### **Form 22. Uploading Wordstar Word Processing Files Using CROSSTALK XVI**

#### **1. SYNOPSIS:**

- Create an ASCII file.
- Use CROSSTALK to upload.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, WordPerfect, and CROSSTALK XVI.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Follow the instructions under **Form 4. Creating an ASCII File Using Wordstar.**
- Enter CROSSTALK XVI and copy your ASCII file from the Wordstar directory.
- Follow the instructions under **Form 19. Uploading ASCII Files Using CROSSTALK XVI.**

#### **6. EXAMPLES/PROGRAMS/NOTES:**

#### **7. TROUBLESHOOTING:**

#### **8. ADDITIONAL REFERENCES:**

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### **Form 23. Uploading ASCII Files Using Tym/COMM 3.0**

#### **1. SYNOPSIS:**

- Connect to PAX using the Tym/COMM software package.
- Transmit data to the PAX system.

**2. POC:** Michael McCulley, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, Tym/COMM 3.0.

**4. HARDWARE REQUIRED:** Modem (e.g., Hayes Smartmodem or compatible).

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- It is assumed from this point on that you have connected with the PAX system as described under **Form 12. Connecting to PAX Using Tym/COMM 3.0.**
- After you have logged onto the PAX system, choose your application from the PAX system menu.
- At a CMS prompt, you can use the COPYPC command to upload a file. The format for the command is:

COPYPC filename on your system	complete PAX filename	<CR>
-----	-----	
(source)	(target)	

The CMS prompt will be displayed when the command completes. An error message will be issued if the upload was unsuccessful.

#### **6. EXAMPLES/PROGRAMS/NOTES:**

#### **7. TROUBLESHOOTING:**

**8. ADDITIONAL REFERENCES:** *Tym/COMM User's Guide, CMS Editing Environment User's Guide.*

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### **Form 24. Uploading ASCII Text Files Using ENABLE**

#### **1. SYNOPSIS:**

- Connect to PAX using ENABLE.
- Attain an "I>" prompt.
- Upload files using ENABLE.

**2. POC:** Roger Day, USA-CERL-FS, COMM (217) 373-6725, FTS 958-7725, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, ENABLE.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Connect to the PAX system using ENABLE and choose your application from the PAX menu (usually CAPCES or PAXMAIL).
- If you are using an application other than PAXMAIL, enter CMS edit mode by typing EDIT <filename> <filetype> at a "CMS>" or "C>" prompt. After seeing an "E>" prompt, enter I for input to attain an "I>" prompt.
- If you are using PAXMAIL, choose Option 1 to send a memo and enter all applicable information for the TO, CC, TOPIC, PTY, and SUBJ lines. Upon completion, you will see an "I>" prompt.
- At the "I>" prompt, press F10 and select Files, Transmit, and None for protocol, then enter the name of the ASCII file you want to send. If the file is not in the source directory being used by ENABLE, specify the path for the file before entering the file name. You will see a message on the screen. You may press Escape to stop the process or any key to start the file transfer. When transfer is completed, you will be online where you can review, edit, save, or cancel the file; or you can send the memo if you are in PAXMAIL.

**6. EXAMPLES/PROGRAMS/NOTES:** See Form 5. Saving an ENABLE File in ASCII Format and Form 9. Creating an ENABLE Teleprocessing Setup for PAX.

**7. TROUBLESHOOTING:** Make sure you have assigned the correct COMM port within the ENABLE telecommunications setup you are using. Also ensure that your telephone is

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working correctly and that the file you wish to send is in ASCII format. If it has no file extension, it must be entered as FILENAME. for ENABLE to find it.

You must start ENABLE with a ,B parameter when you are connecting to a computer using full duplex. An example of the start-up command is:

ENABLE (,,,C:\MYDIR),B

If you omit the B parameter, the file will not upload successfully. Some early versions of ENABLE do not recognize the ,B parameter and do not upload successfully.

**8. ADDITIONAL REFERENCES:** *ENABLE Telecommunications Manual, ENABLE Word Processing Manual.*

**SECTION IV.**  
**DOWNLOADING**



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### **Form 25. Capturing Screen Text Using SMARTCOM II**

#### **1. SYNOPSIS:**

- Connect to PAX using SMARTCOM II (SCOM).
- Download files/programs/mail from any PAX application.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, SMARTCOM II.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

**5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:** It is possible to capture a session and record it to the PC disk (hard or floppy), regardless of your present application in PAX. You have complete control over the origination and termination of recording.

- Connect to the PAX system using SCOM and logon.
- At the point where you want to start capturing the screen data and recording it onto your PC disk, use one of the following options:
  - a. Press F1 and go back to the SCOM menu. Select the 4. Receive File option from the menu. For selecting the protocol, accept the default option (2.Stop/Start). Then enter a file name for storing the downloaded data in the SCOM directory. Press return. Everything you see on the screen will be captured and stored until you stop recording by pressing either F1 or F4.
  - b. At the moment you want to start capturing, press F4. Everything you see on the screen will be captured and stored in a file called TEMP until you stop recording by pressing either F1 or F4. Immediately, if you press F1, or at the time of logoff if you press F4, you will be prompted to rename the file received.
- At this point, you can either proceed with your online operations or logoff. In either case, with your file now on your PC disk and in the SCOM directory, you can later perform the offline operations you wish (edit, print, etc.).

#### **6. EXAMPLES/PROGRAMS/NOTES:**

Example 1. You received a very long PAXMAIL which you do not want to print while online: record it onto your PC disk by initiating one of the two options above at the "VIEW MAIL?>" prompt. You can view your mail while it is being stored on your PC

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disk and you can print it later. You need not store it on your PAXMAIL disk (for which you pay).

Example 2. There is a long report under someone else's ID linked by you, or there is something else on PAX (a long newsletter or a long program) that you do not want to print online; or your printer cannot keep up with the screen; or you want to edit the text offline or copy it onto a floppy disk, etc.: decide when to start and stop recording, and follow the instructions above.

**7. TROUBLESHOOTING:** Since you initiate and terminate downloading, unwanted extra lines sometimes are captured at the beginning or end of the document being downloaded. To remove them, you can use either *DOS* command *EDLIN* or a word processing package after moving the file into a word processing environment.

**8. ADDITIONAL REFERENCE:** *Hayes Smartcom II Manual*.

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### **Form 26. Capturing Screen Text Using CROSSTALK XVI**

#### **2. SYNOPSIS:**

- Connect to PAX using CROSSTALK (XTALK) package.
- Transmit Data from the PAX system.

**2. POC:** Michael McCulley, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, CROSSTALK XVI.

**4. HARDWARE REQUIRED:** Modem (e.g., Hayes Smartmodem or compatible).

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Initially, CROSSTALK is set to accept data and Function Key 5 is set to toggle the Capture function of CROSSTALK. Using this key you can toggle between "capture on" and "capture pause" as you proceed. The system can be set up to turn the Capture off as well.
- If this is the first time the downloading routine is used, CROSSTALK must be prepared by setting Function Key 9 to perform the appropriate task. To do this step, first load the PAX dialup file. Next, it is necessary to obtain the "Command?" prompt in CROSSTALK by striking the ESC key for attention. After the "Command?" prompt, reply with "FK 9 @CA OFF|". You must then save these changes for future use by exercising the Save command after the "Command?" prompt. Example:

```
Command?  
FK 9 @CA OFF|  
Command?  
SAVE PAX.XTK
```

- From this point on, it is assumed that you have connected to the PAX system and formatted your disk as described in Form 11. Connecting to PAX Using CROSSTALK XVI.
- When you want to start downloading, strike Function Key 5. Your system will be capturing the data sent to the screen.
- CROSSTALK will display the sending action. Upon completion, strike Function Key 9 to exit the Capture routine.

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- CROSSTALK will prompt you with the option of saving or deleting the downloaded file. Then you will be prompted to name the downloaded file for storage.
- At this point you can either proceed with your online operations or log off and perform offline operations (e.g., print).

**6. EXAMPLES/PROGRAMS/NOTES:** As an example, suppose you have received a very long PAXMAIL that you do not want to print while online: at the "VIEW MAIL?>" prompt before the carriage return, strike Function Key 5; after the screen data capture is completed, press Function Key 9. You can view your mail while it is being stored on your PC disk.

Note: XTALK Script files can be written to complete this task using a menu-driven system that can be controlled with a mouse or the keyboard. The menu can be as follows:

### **FILE TRANSFER MENU**

- A. Receive a File from the PAX System.
- B. Send a File to the PAX System.
- C. List Files on the PAX System.
- D. List Files on Your System.
- E. Delete a File on the PAX System.
- F. Display a File on the PAX System.
- G. Exit Script and Return to CMS.
- H. Exit PAX System and Return to MS-DOS.

## **7. TROUBLESHOOTING:**

## **8. ADDITIONAL REFERENCE: *CROSSTALK User's Manual.***

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### **Form 27. Downloading Files From PAX Using Tym/COMM 3.0**

#### **1. SYNOPSIS:**

- Connect to PAX using the Tym/COMM software package.
- Transmit data from the PAX system.

**2. POC:** Michael McCulley, USA-CERL-FS, COMM (217) 373-6728, FTS 958-7728, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, Tym/COMM 3.0.

**4. HARDWARE REQUIRED:** Modem (e.g., Hayes Smartmodem or compatible).

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- It is assumed that you have connected to the PAX system as described in **Form 12. Connecting to PAX Using Tym/COMM 3.0.**
- After you have logged onto the PAX system, choose your application from the PAX system menu.
- At a CMS prompt, you can use the COPYPC command to download a file. The format for the command is:

COPYPC complete file name on PAX	file name on your system	<CR>
-----	-----	
(source)	(target)	

The CMS prompt will be displayed when the command completes. An error message will be issued if the download was unsuccessful.

#### **6. EXAMPLES/PROGRAMS/NOTES:**

#### **7. TROUBLESHOOTING:**

**8. ADDITIONAL REFERENCES:** *Tym/COMM User's Guide, CMS Editing Environment User's Guide.*

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### **Form 28. Capturing Screen Text Using ENABLE**

#### **1. SYNOPSIS:**

- Connect to PAX using ENABLE.
- Use the Capture mode.

**2. POC:** Roger Day, USA-CERL-FS, COMM (217) 373-6725, FTS 958-7725, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, ENABLE.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- From the ENABLE main menu, select Use System, Telecom, Communicate, and Use Setup. Enter the name of the setup you will use or press the Up key to move the cursor to the desired setup; then press Enter.
- Enter the file name to which you want to capture text from the screen such as reports, data bases, or electronic mail.
- Next, ENABLE will make the connection and you will be entered into the PAX application you wish.
- Any time during the session when you want to capture text or data, use the F7 key, which is a toggle for Capture mode. Pressing Page Up during the session will let you edit any text you have been capturing. Pressing Shift/F9 will return you to your online session.
- To end your session, select F10, Disconnect, Yes, and then answer Yes or No to whether you want to save any captured data. If you say Yes, you can save it under the name shown on the status line or under a different name by selecting Change Options. If you say No, hitting any key will return you to the ENABLE main menu.

**6. EXAMPLES/PROGRAMS/NOTES:** See Form 13. Connecting to PAX Using ENABLE.

**7. TROUBLESHOOTING:** Make sure that you have assigned the correct COMM port within your ENABLE telecommunications setup. Also, ensure that your telephone line is working correctly.

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Recent versions of *ENABLE* allow you to capture text or files onto a disk. Use the F10 menu while online to open a disk capture file and then close it after the text or file has been typed out. The disk file will be in ASCII format. If you have captured a data base file onto a disk, it can be converted to an *ENABLE* data base by designing and running an *ENABLE* transfer form. This conversion takes place using the *ENABLE* DBMS copy screen. See *ENABLE* DBMS Manual.

**8. ADDITIONAL REFERENCE:** *ENABLE Telecommunications Manual*.

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### **Form 29. Downloading CAPCES Data Using PC/FOCUS**

#### **1. SYNOPSIS:**

- Connect to PAX.
- Request data to be downloaded.
- Receive options for downloading data.

**2. POC:** Sandra Kappes, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7542, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** MS-DOS, PC/FOCUS.

**4. HARDWARE REQUIRED:** Hayes Smartmodem or compatible.

#### **5. STEP-BY-STEP-PROCEDURE/INSTRUCTIONS:**

- Connect to PAX following the instructions in **Form 14. Connecting to PAX Using PC/FOCUS.**
- Choose CAPCES from the PAX System Menu and enter mainframe FOCUS by typing FOCUS at the CMS> prompt.
- Request the data to be downloaded by using the TABLE or TABLEF command. The line directly before the END command must contain the command:

ON TABLE PCHOLD AS [m:fnm]

where m is the target disk on your PC and fnm is a file name of your choice. Once the report is generated, the data is transferred to your PC.

#### **6. EXAMPLES/PROGRAMS/NOTES:**

*Sample Focexec Using the PCHOLD Command*

```
TABLE FILE PMMFILE
PRINT KEYNR PDES PROG AMT
BY FY
IF COMMAND IS FORSCOM
IF FY EQ 85
ON TABLE PCHOLD AS C:FY85
END
```



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### ***Options in Using the PCHOLD Command***

Option 1: ON TABLE PCHOLD AS [m:fnm]. The data is transferred to a file with the extension .FTM which can then be used to generate other reports in PC/FOCUS. The Master File description is also downloaded with the file extension .MAS.

Option 2: ON TABLE PCHOLD AS [m:fnm] FORMAT DIF. The data is transferred to a file in Data Interchange Format with the extension .DIF. This file can then be used by most spreadsheet programs.

Option 3: ON TABLE PCHOLD AS [m:fnm] FORMAT LOTUS. The data is transferred to a file in LOTUS PRN format with a .PRN extension.

Option 4: ON TABLE PCHOLD AS [m:fnm] FORMAT WP. The data is transferred to a file in ASCII format exactly as it would appear on the screen with a .WP extension. The file can then be used by most word processing software packages.

### **7. TROUBLESHOOTING:**

### **8. ADDITIONAL REFERENCE: *PC/FOCUS Guide to Operations***

**SECTION V.**  
**PAX ONLINE OPERATIONS**

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### **Form 30. Using the PAX File Management Facility (FMF)**

#### **1. SYNOPSIS:**

- Access the PAX system.
- Access and use the File Management Facility (FMF).

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** NA.

**4. HARDWARE REQUIRED:** NA.

#### **5. STEP-BY-STEP-PROCEDURE/INSTRUCTIONS:**

- Gain access to the PAX system as you normally would.
- Select the option you desire. (Note: you can use FMF from any application as long as you are in CMS.)
- Enter GETLIB at the "C>" or "CMS>" prompt. Press Enter.
- Now enter FMF and you will be presented with the main menu containing the list of FMF subsystems: File Management, Mass Storage, Tape Management, Temporary Disk Storage, and Microfiche Subsystems. See the summary of subsystem features in paragraph 6 below.
- As you select options, FMF will present submenus and prompt you for subsequent actions. See the sample FMF access procedure below.

#### **6. EXAMPLES/PROGRAMS/NOTES:**

##### *Summary of Subsystem Features*

**File Management:** create a new file, change a file, move files from disk to disk, consolidate files, etc.

**Mass Storage:** large files to be permanently stored on a disk can be moved from application minidisks to mass storage. Files in mass storage can be either private or made accessible to all PAX users.

**Tape Management:** provides a friendly, easy method of moving files to and from magnetic tape--usually a less expensive method of storing files than using disks.

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**Temporary Disk Storage:** if files larger than currently available permanent disk storage are to be manipulated, use this option to obtain temporary space in which to work.

**Microfiche:** can be used for storing files on microfiche.

A sample FMF access procedure is as follows:

CMS>GETLIB  
3:31 EDT

CMS>FMF

\* # \* FILE MANAGEMENT FACILITY \* # \*

PLEASE SELECT FUNCTION BY LETTER (#):  
# FUNCTION

CMS  
COMMAND

-----  
F FILE MANAGEMENT - EDIT, COPY, RENAME...  
M MASS STORAGE SUBSYSTEM  
T TAPE MANAGEMENT - TAPE FILE HANDLER  
G GETDISK - TEMPORARY DISK STORAGE  
I MICROFICHE SUBSYSTEM

-----  
FILMANG  
MASSTORE  
TAPMANG  
GTDISK  
MFICHE

S SHOW DISKS AVAILABLE FOR USE  
H HELP WITH FMF FACILITIES / COMMANDS

SHOWDSK  
FMFHELP

? RESHOW FMF MAIN MENU

X: EXIT                      09/30/85      12:32

ENTER SELECTION ==>F

FILE MANAGER SUBSYSTEM

PLEASE SELECT FUNCTION BY LETTER (#):  
# FUNCTION

CMS  
COMMAND

-----  
F SHOW INFO ABOUT FILES  
E EDIT FILE OR CREATE NEW FILE  
C COPY FILE(S)  
R RENAME FILE  
D ERASE (DELETE) FILE(S) FROM DISK  
T TYPE FILE  
H HELP WITH FILE MANAGER  
Y ENTER CMS (ENTER "QUIT" TO RETURN)

-----  
LFILE  
FEDIT  
FCOPY  
RENFILE  
DELFILE  
TYPEFILE  
FMFHELP  
FMFCMS

B WORK WITH FILES BY FILE NAME LIST

BYNAME

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S	SELECT FILES IN FILE NAME LIST	MLIST
L	SHOW LIST OF FILES IN FILE NAME LIST	SHOWLST

?RESHOW MENU - (FOR HELP, ENTER "HELP" AND COMMAND NAME)

X: EXIT                                      09/30/85                      12:32

ENTER SELECTION ==>

### **7. TROUBLESHOOTING:**

**8. ADDITIONAL REFERENCE:** *PAX/FMF File Management Facility User Manual.*

## **DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL**

### **Form 31. Using the PAX File Transfer Facility (PAXNET)**

#### **1. SYNOPSIS:**

- Access the PAX system.
- Access and use PAXNET.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** NA.

**4. HARDWARE REQUIRED:** NA.

**5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:** PAXNET is a mainframe-to-mainframe communications package that allows files to be transferred between PAX and other mainframe computers. The network is PAX-centered, in that all file transfer requests (FTRs) are initiated from a PAX ID by a PAX user. Currently, files in ASCII format with no more than 80 characters in record length and 180 kilobytes in size can be transferred between PAX and three other data centers using the following procedure:

- Gain access to the PAX system as you normally would.
- Enter GETLIB at a "C>" or "CMS>" prompt, regardless of your current application in PAX. Press Enter.
- Now enter either HTHXFER or XFERFILE. Press Enter.
- HTHXFER will show you the main menu and allow you to select whether to send a file, retrieve a file, etc. Then a series of prompts will ask you where you are sending it (or from where you are retrieving the file), what file name the duplicate will have, and similar questions. All you need to do is follow the prompts to perform a file transfer. See the sample PAXNET access procedure in paragraph 6 below.
- If you are not using the file transfer facility for the first time, you can also enter XFERFILE to skip the main menu. You will be prompted for the same choices listed above.
- Although the file transfer process is automatic, it is not instantaneous; therefore, you can continue with other work or log off and check the status of the transfer later.

## DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL

- To check on the status of the FTR, enter GETLIB at a "C>" or "CMS>" prompt and press Enter (first enter the PAX environment if you logged off earlier). Next, enter STATFTR. A list of completed and open FTRs will appear. This list also can be accessed from the main menu (Option S). A status of DONE indicates that the FTR is completed.
- If you are retrieving a file, you can access it once the status message shows DONE. Go to the main menu by entering HTHXFER and selecting Option M. You will then be prompted for the name of the file you want to retrieve. Enter the file name and file type. The file will be placed on your "A" disk.

**6. EXAMPLES/PROGRAMS/NOTES:** Using PAXNET, you can transfer files between PAX IBM (CAPCES, DD1391, PAXMAIL, etc.); Engineering and Service Administration (EASA) Honeywell (MCPRS and other data bases); Planning Research Corp. (PRC), IBM (HQIFS data base); and University of Illinois/USA-CERL VAX e.g., the ETIS data base). PAXNET is currently being enhanced for adding more mainframes, handling binary or larger files, and other functions.

A sample PAXNET access procedure is as follows:

CMS>GETLIB

11:34 EDT

CMS>HTHXFER

HOST TO HOST FILE TRANSFER SUBSYSTEM

PLEASE SELECT FUNCTION BY LETTER (#):

# FUNCTION

CMS

COMMAND

T TRANSFER FILE TO REMOTE HOST  
R RETRIEVE FILE FROM REMOTE HOST  
M MOVE RECEIVED FILE TO YOUR DISK  
S STATUS OF A FILE TRANSFER REQUEST

SENDFILE  
RETRVFIL  
XMOVE  
STATFTR

Y ENTER CMS (ENTER "QUIT" TO RETURN)

FMFCMS

H HELP WITH FILE TRANSFER MENU

FMFHELP

? RE-SHOW MENU

X: EXIT 10/04/85 10:35

ENTER SELECTION -=ENTER::>T

SEND FILE TO REMOTE HOST -  
XFERFILE SEND

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PLEASE ENTER THE NAME OF THE FILE YOU WANT TO TRANSFER  
AS IT NOW APPEARS ON PAX

ENTER FILE NAME, TYPE AND MODE ( OR QUIT )

fn ft fm --ENTER::>SAMPLE DATA A

SELECT REMOTE HOST BY NUMBER:

NUMBER	HOST NAME	EXAMPLE FILE NAME FOR HOST
1.	CERL / U. of Ill. / VAX	yourfile.filetype
2.	PRC	filename filetype fm
3.	HONEYWELL - EASA	filename.qual

ENTER HOST NUMBER --ENTER::>3

PLEASE ENTER THE NAME THIS FILE WILL BE GIVEN ON THE REMOTE HOST  
PLEASE ENTER THE ENTIRE NAME  
TARGET FILE NAME --ENTER::>

### **7. TROUBLESHOOTING:**

### **8. ADDITIONAL REFERENCES:**



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### **Form 32. Mailing Files From Other PAX Applications**

#### **1. SYNOPSIS:**

- Access the PAXMAIL system.
- Mail files stored on CAPCES or other disks.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** NA.

**4. HARDWARE REQUIRED:** NA.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Gain access to the PAXMAIL system as you normally would.
- Select Option 1 and proceed with the normal procedure for sending mail. When you reach the point at which you want to insert a file stored on another disk: if you have an "E>" prompt, type "X"; otherwise, first press Return to enter edit mode and then type "X".
- You will be asked the location, name, and type of file. Upon confirming the information you furnish, the file will be inserted into your mail.
- Proceed with your normal PAXMAIL operations.

**6. EXAMPLES/PROGRAMS/NOTES:** As an example, say you have a file on the CAPCES disk that you want to send by PAXMAIL to someone else. First, gain access to PAXMAIL and initiate the mail sending procedure. At the "E>" prompt, enter "X". Choose CAPCES from the list of applications posted. Enter the file name and file type at the "FN?>" and "FT?>" prompts. After your confirmation, a copy of the file on your CAPCES disk will be inserted into your PAXMAIL.

#### **7. TROUBLESHOOTING:**

**8. ADDITIONAL REFERENCE:** PAXMAIL Training Manual.

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### **Form 33. Linking to Other User Disks**

#### **1. SYNOPSIS:**

- Access the PAX system.
- Execute the CMS LINK and COPY commands.

**2. POC:** Ilker Adiguzel, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** NA.

**4. HARDWARE REQUIRED:** NA.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Connect to the PAX system, log on, and select an application from the PAX menu (usually CAPCES). At a "C>" or "CMS>" prompt, enter the LINK and ACCESS commands in the syntax as follows:

```
C>LINK userid sysaddr vaddr accmode password
C>ACC vaddr filemode
```

where:

userid     = User ID being linked.  
sysaddr    = System-assigned address for the disk being linked (298 for PAXMAIL).  
vaddr       = Virtual address assigned by user (cannot be previously assigned to any other disk to which you are currently linked; this can be checked by the QUERY SEARCH command).  
accmode    = Virtual device access mode (RR for read access).  
password   = Access mode password (CAPR for read-only access in CAPCES).  
filemode   = Virtual configuration access mode (last parameter of CMS file identifier: fn ft fm). This identifier also cannot be assigned to any other disk to which you are currently linked and can be checked by the QUERY SEARCH command.

- You may now copy a file or group of files onto your "A" disk using the COPY command. The COPY command can combine two or more files into a single file

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or copy one or more files into one or more new files without affecting the old file(s). The general form of the COPY command is as follows:

C>COPY	filename filetype filemode	filename filetype filemode
	-----	-----
	input file list	output file identifier
	(source)	(target)

- o The input file list comprises one or more file identifiers, separated by blanks. In any input identifier, either none, one, or two of the three components can each be specified by an asterisk; for example, if an asterisk is given for the file name, then all files with the specified file type and file mode will be copied, regardless of their file names.
- o The output file identifier must have all three components specified, but any component may be specified by an equal sign to indicate that that component is to be the same as in the first input file identifier. If the user specifies an output file identifier that already exists, the system prints a message such as:

FILE 'SAMPLE DATA A1' ALREADY EXISTS -- SPECIFY 'REPLACE'

If you want to write over the existing file, specify the REPLACE option as follows:

C>COPY	fn ft fm	fn ft fm (REPLACE)
	-----	
	(source)	(target)

**6. EXAMPLES/PROGRAMS/NOTES:** As an example, the set of commands for linking to the CAPCES disk of the CERL user, listing the files on that disk, and copying a file called SAMPLE DATA is:

```
C>LINK CERL 294 100 RR CAPR
C>ACC 100 B
C>LIST * * B
C>COPY SAMPLE DATA B = = A
```

Note: All of the above functions (linking, listing, copying, etc.) can be performed using the File Management Facility (FMF), in which case there is no need for executing the LINK and ACCESS commands. See Form 30. Using the PAX File Management Facility (FMF).

**7. TROUBLESHOOTING:** The read and write passwords for the user disks can be changed by a PAX user. Therefore, before executing a LINK command, make sure that the password for the ID to which you want to link is current.

**8. ADDITIONAL REFERENCES:** *CMS Editing Environment User's Guide, PAX/CAPCES Training Manual.*

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### **Form 34. Using the CMS Message Facility**

#### **1. SYNOPSIS:**

- Use the MESSAGE command.
- Use the SLEEP command.

**2. POC:** Roger Day, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** NA.

**4. HARDWARE REQUIRED:** N/A.

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- A PAX user can request and receive online help from the operator or another user through the MESSAGE command. Its general form is:

C>MSG OPERATOR <message>

- The <message> can contain as many as 130 characters including line feeds (which return the carriage but do not end the message). The operator can also send a message to the user, but the user does not receive the message until he/she enters a command or presses a carriage return. In addition, a user must be logged on in order to receive messages.
- The SLEEP command allows messages to be printed on your terminal as soon as they are sent; in this way, you need not enter a command or press a carriage return to receive the online messages sent. The form of the SLEEP command is:

MIN  
C>SLEEP <time> SEC  
HRS

where <time> specifies the number of minutes, seconds, or hours. The default time unit is MIN. If no time is specified, SLEEP remains in effect until you terminate it by pressing the Escape key. You cannot enter other commands while the SLEEP command is in effect.

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**6. EXAMPLES/PROGRAMS/NOTES:** A PAX user can set his or her message facility to "off" by issuing the SET MSG OFF command at a "CMS>" or "C>" prompt. This can be reversed later by typing SET MSG ON. This feature is useful if, for example, a report is being printed.

The following user IDs can be used for online assistance:

OPERATOR	-	for general problems
TYMSERV	-	for PAX-related problems
CAP001	-	for CAPCES or FOCUS problems.

**7. TROUBLESHOOTING:** If the message exceeds 130 characters, it is truncated before it is transmitted to the addressee. For longer messages, PAXMAIL can be used, although a quick response is not always forthcoming.

The message cannot be delivered if the addressee has turned his or her message facility off. In this case, the sender is notified.

**8. ADDITIONAL REFERENCES:** *CMS Editing Environment User's Guide, PAX/CAPCES Training Manual.*

**SECTION VI.**

**MICROCOMPUTER-ASSISTED DD FORM 1391 PROCESSING**

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### **Form 35. Editing a New DD Form 1391 Using a Personal Computer**

#### **1. SYNOPSIS:**

- Create a new form.
- Create a template file for text entry.
- Enter text on a new form.

**2. POC:** Sandra Kappes, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

#### **3. SOFTWARE REQUIRED:**

- Word processing package capable of producing ASCII files (e.g., Wordstar, WordPerfect).
- Communications package (e.g., Smartcom II, XTALK).

**4. HARDWARE REQUIRED:** Modem (e.g., Hayes Smartmodem or compatible).

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Enter the 1391 system and prepare a new form in the usual way.
- Enter the data gathered for nontext input; generally, this includes data for blocks 1 through 9. Do not fill in text at this time.
- Using the 1391 Processor /Save command, save the form and log off the PAX system.
- Now that the form has been created, the text can be entered using a word processor. In order to be uploaded to the DD Form 1391 system, the text file must be in a specific format. It is recommended that a template file be created using the format required. A copy of this template can then be used to enter text for a particular form using a file name related to the form number (e.g., T15279). A sample of the empty template is given in paragraph 6 below. The following rules must be followed strictly:
  - a. Line 1 must be the user's processor identification word.
  - b. Line 2 must be "RECALL FORM xxxx" where xxxx is the assigned form number.

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- c. Text paragraphs must be in the same order and paragraph numbers typed exactly as they appear in the sample template.
- d. Text information is anything between the paragraph number and the end-of-paragraph mark \*\*\*. Text within a paragraph will replace any text already stored for that paragraph in the 1391 data base. If a paragraph is listed but the next line is the end-of-paragraph mark, there will be no effect on the previously stored form. Also, any paragraph can be omitted from the template with no effect on the form by removing the paragraph number line and end-of-paragraph marker. Comments, which are considered part of the text, can be entered by typing an exclamation point and then the comment.
- e. The /SAVE command is required to save form changes.
- f. The preparer's name, office, and telephone number must be typed in the P1., P2., and P3. paragraphs, respectively.
- g. The end-of-form symbol, /\* , must appear in the first two columns. You can enter multiple forms by starting over again at RECALL FORM xxxxx.
- h. The end-of-process symbol,)/(, must follow the last /\* end-of-form symbol.
- After the textual information has been entered into the template, it must be saved as an ASCII file. See **Form 4. Creating an ASCII File Using Wordstar** or **Form 2. Converting WordPerfect Word Processing Files to ASCII Format**. The file can then be uploaded into the DD Form 1391 Processor. See **Form 36. Uploading a Form to the DD Form 1391 Processor**.

### **6. EXAMPLES/PROGRAMS/NOTES:**

#### *Sample Template*

```
AAAAAA !PUT YOUR DD1391 PROCESSOR IDENTIFICATION HERE
RECALL FORM ##### !ENTER FORM NUMBER HERE
10F.!DESCRIPTION OF WORK TO BE DONE (TEXT)
***
11J.!REMARKS (TEXT)
***
11K.!RELATED PROJECTS (TEXT)
***
11L.!PROJECT (WHAT IS NEEDED) (TEXT)
***
11M.!REQUIREMENT (WHY IS IT NEEDED NOW) (TEXT)
***
11N.!CURRENT SITUATION (HOW IS NEED CURRENTLY BEING MET) (TEXT)
***
11O.!IMPACT IF NOT PROVIDED (TEXT)
***
11P.!ADDITIONAL (TEXT)
```



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\*\*\*

D1.!GENERAL (TEXT)

\*\*\*

D2.!ACCOMMODATIONS NOW IN USE (TEXT)

\*\*\*

D3.!ANALYSIS OF DEFICIENCY (TEXT)

\*\*\*

D4.!CONSIDERATION OF ALTERNATIVES (TEXT)

\*\*\*

D5.!CRITERIA FOR PROPOSED CONSTRUCTION (TEXT)

\*\*\*

D6.!PROGRAM FOR RELATED FURNISHINGS AND EQUIPMENT (TEXT)

\*\*\*

D7.!DISPOSAL OF PRESENT ASSETS (TEXT)

\*\*\*

D8.!SURVIVAL MEASURES (TEXT)

\*\*\*

D9.!SUMMARY OF ENVIRONMENTAL CONSEQUENCES (TEXT)

\*\*\*

D10.!EVALUATION OF FLOOD HAZARDS (TEXT)

\*\*\*

D11.!ECONOMIC JUSTIFICATION (TEXT)

\*\*\*

D12.!UTILITY AND COMMUNICATIONS SUPPORT (TEXT)

\*\*\*

D13.!PROTECTION OF HISTORIC PLACES AND ARCHEOLOGICAL SITES (TEXT)

\*\*\*

D14.!PROJECT DEVELOPMENT BROCHURE (TEXT)

\*\*\*

D15.!ENERGY REQUIREMENTS (TEXT)

\*\*\*

D16.!PROVISIONS FOR THE HANDICAPPED (TEXT)

\*\*\*

D17.!REAL PROPERTY MAINTENANCE ACTIVITY (RPMA) ANALYSIS (TEXT)

\*\*\*

D18.!COMMERCIAL INDUSTRY TYPE ACTIVITY (CITA) ANALYSIS (TEXT)

\*\*\*

SR1.!SPECIAL REQUIREMENTS PARAGRAPH 1. (TEXT)

\*\*\*

SR2.!SPECIAL REQUIREMENTS PARAGRAPH 2. (TEXT)

\*\*\*

SR3.!SPECIAL REQUIREMENTS PARAGRAPH 3. (TEXT)

\*\*\*

SR4.!SPECIAL REQUIREMENTS PARAGRAPH 4. (TEXT)

\*\*\*

SR5.!SPECIAL REQUIREMENTS PARAGRAPH 5. (TEXT)

\*\*\*

SR6.!SPECIAL REQUIREMENTS PARAGRAPH 6. (TEXT)

\*\*\*

SR7.!SPECIAL REQUIREMENTS PARAGRAPH 7. (TEXT)

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\*\*\*

SR8.!SPECIAL REQUIREMENTS PARAGRAPH 8. (TEXT)

\*\*\*

SR9.!SPECIAL REQUIREMENTS PARAGRAPH 9. (TEXT)

\*\*\*

SR10.!SPECIAL REQUIREMENTS PARAGRAPH 10. (TEXT)

\*\*\*

/SAVE

P1. !PREPARER'S NAME

P2. !PREPARER'S OFFICE

P3. !PREPARER'S PHONE NUMBER

/\*

)/\*(

### *Sample Form*

RECALL FORM 15276

10F.!DESCRIPTION OR WORK TO BE DONE. NOTICE THAT THIS IS A COMMENT AND WILL BE CONSIDERED PART OF THIS PARAGRAPH. IF ANYTHING WAS ALREADY STORED FOR THIS PARAGRAPH IT WILL BE ERASED AND REPLACED BY THIS TEXT.

Renovation of building.

\*\*\*

11L.

\*\*\*

11P.

\*\*\*

/SAVE

P1.Preparer's Name

P2.Preparer's Office

P3.Preparer's Phone Number

/\*

)/\*(

In this sample form, only three paragraphs are included. If text had already been entered into the form for the omitted paragraphs, it would not be overwritten. However, in paragraph 11L, the blank line will be considered text and will overwrite anything stored previously. Since nothing is entered into paragraph 11P, any existing text will not be affected.

### **7. TROUBLESHOOTING:**

### **8. ADDITIONAL REFERENCE:** *DD Form 1391 Processor System Manual.*

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### **Form 36. Uploading a Form to the DD 1391 Processor**

#### **1. SYNOPSIS:**

- Use the BATCHIN command to upload text to the DD 1391 Processor.

**2. POC:** Sandra Kappes, USA-CERL-FS, COMM (217) 352-6511, FTS 958-7516, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

**3. SOFTWARE REQUIRED:** Communications Package (e.g., SMARTCOM II, XTALK).

**4. HARDWARE REQUIRED:** Modem (e.g., Hayes Smartmodem or compatible).

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Enter the DD Form 1391 Processor system in the usual way.
- At the time-of-day prompt, enter BATCHIN and press the carriage return. The following message will then be displayed on the screen:

PLEASE ENTER IMMEDIATE, OVERNIGHT, OR QUIT

- Type "IM" for immediate if results are required while you are online. Type "OV" for overnight if results are not needed until the next morning since these requests will be processed in a batch run at night. After typing IM or OV, press the carriage return. The following choices will then be displayed:

WHERE IS THE FILE THAT NEEDS TO BATCHED IN:

- 1) OFFLINE STORAGE DEVICE OR MICROCOMPUTER
- 2) DD1391 PERMANENT DISK

- Since a file is to be sent from the microcomputer to the mainframe, choose Option 1 and press the carriage return.
- The system then prompts you to turn on the reader--that is, to start transmission of the file to the mainframe. The method for doing this step depends on the type of communications software being used. Refer to "Uploading files to PAX" section for instructions.
- Once the reader has been turned on, you should see the message "Sending file: filename". After the file transmission is complete, the following line is displayed on the screen:

RECORDS = xx, BYTES = xxxx, ACTIVATIONS = x

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- The system now performs diagnostics on the transmitted file. It checks for errors such as missing identification word, /SAVE command, paragraph order and other necessary lines as described in **Form 35. Editing a New DD Form 1391 Using a Personal Computer**. If a fatal error occurs, the system will be unable to continue processing the file. If a nonfatal error occurs, the error will be listed in the diagnostics report and the user can decide whether to continue. An example of a fatal error would be omitting the identification word or RECALL statement. Common nonfatal errors are forgetting to enter the preparer's name or the end-of-form symbol.
- If no fatal errors are reported for your form, you will be able to load it successfully into the 1391 Processor by answering "Y" to the prompt DO YOU WISH TO CONTINUE TO LOAD THIS FILE (Y/N). If there are errors you wish to correct before loading the form, answer "N" and return to your word processing package to correct them.
- If you chose to load the file, the system will respond with a message stating that the BATCHIN load request is completed.

**6. EXAMPLES/PROGRAMS/NOTES:** A sample session using the BATCHIN command is as follows:

15:44:05>BATCHIN IM

WHERE IS THE FILE THAT NEEDS TO BATCHED IN:

- 1) OFFLINE STORAGE DEVICE OR MICROCOMPUTER
- 2) DD1391 PERMANENT DISK

SELECT >1

Turn on reader

Sending file: C:T15279

RECORDS = xx, BYTES = xxxx, ACTIVATIONS = x

DIAGNOSTICS REPORT FOR TRANSMITTED BATCH FILE

\*\*\* Error Listing for Form xxxxx \*\*\*

No Fatal Errors for Form xxxxx .

Diagnostics Completed for Form xxxxx.

DO YOU WISH TO CONTINUE TO LOAD THIS FILE (Y/N)?

>Y

THANK YOU, PLEASE WAIT... THE PROCESS MAY TAKE SEVERAL MINUTES

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DD1391 BATCHIN BATCH EXECUTION REPORT FORM NUMBER(S) UPDATED THIS RUN

RECALL OF FORM NUMBER   xxxxxx BEGINNING  
FORM NUMBER               xxxxxx SAVED

THIS COMPLETES YOUR BATCHIN LOAD REQUEST

**7. TROUBLESHOOTING:**

**8. ADDITIONAL REFERENCE:** *DD Form 1391 Processor System Manual.*

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### **Form 37. Revising an Existing DD Form 1391 Using a Personal Computer**

#### **1. SYNOPSIS:**

- Use the BATCHOUT command to download existing DD Form 1391 text to a personal computer.
- Edit downloaded text using a word processing package.

**2. POC:** Sandra Kappes, USA-CERL-FS, COMM (217) 352-6511, FTS 958 7516, toll free 800-USA-CERL (800-252-7122 inside Illinois).

#### **3. SOFTWARE REQUIRED:**

- Word processing package that can produce ASCII files (e.g., Wordstar, WordPerfect).
- Communications package (e.g., Smartcom II, XTALK).

**4. HARDWARE REQUIRED:** Modem (e.g., Hayes Smartmodem or compatible).

#### **5. STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

- Enter the DD Form 1391 Processor system in the usual way.
- At the time-of-day prompt, enter BATCHOUT and press the carriage return. The following messages will then be displayed on the screen:

THIS PROGRAM WILL ALLOW YOU TO COPY TEXT PARAGRAPHS TO YOUR  
PERMANENT DISK OR TO AN OFFLINE DEVICE IN A FORMAT DESIGNED  
FOR USE WITH THE BATCHIN PROGRAM. TYPE /HELP FOR ASSISTANCE  
OR CARRIAGE RETURN TO CONTINUE.

- As instructed, press carriage return to continue. The system will then ask for your Processor identification.

IDENTIFICATION: AAAAA

- Next you are prompted for the forms and textfields that you want to download. For example:

PLEASE ENTER ONLY ONE FORM NUMBER AFTER EACH PROMPT  
TYPE "END" WHEN FINISHED.

>15279  
-END

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**PLEASE ENTER THE TEXTFIELDS YOU WISH TO DOWNLOAD, ONE FIELD OR A PAIR OF FIELDS SEPARATED BY A HYPHEN, PER LINE. ENTER ALL FOR ALL TEXT FIELDS. TYPE END TO FINISH.**

=>10P  
=>D1-D5  
=>end

- The system will then display the following options:

**WHERE DO YOU WANT TO STORE THIS DATA:**

- (1) OFFLINE STORAGE DEVICE
- (2) DD1391 PERMANENT DISK

**SELECT:**

- At the "SELECT >" prompt, type "1" for offline storage device. The system then requests that you turn on the offline device. In other words, it requests you to instruct your communications software to receive a file to your PC's hard disk or floppy diskette. Refer to "Downloading Files to a Personal Computer" section for instructions.
- After the BATCHOUT procedure has finished, the following message is displayed and the user is returned to the time of day prompt:

**## RECORDS WRITTEN TO OFFLINE DEVICE**

- At this point, do not forget to turn off the offline device. Otherwise, all text written onto the screen will be sent to your PC file. If you do forget, you can easily remove the unwanted lines from within your word processor.
- Your form(s) are now on your microcomputer under the file name you selected. To revise them, leave the PAX system and edit them using your word processor. When you are finished, upload the files into the 1391 system using the BATCHIN command. Refer to **Form 36. Uploading a Form to the DD Form 1391 Processor.**

**6. EXAMPLE/PROGRAM/NOTES:** A sample session using the BATCHOUT command is as follows:

15:51:14>BATCHOUT

THIS PROGRAM WILL ALLOW YOU TO COPY TEXT PARAGRAPHS TO YOUR PERMANENT DISK OR TO AN OFFLINE DEVICE IN A FORMAT DESIGNED FOR USE WITH THE BATCHIN PROGRAM. TYPE /HELP FOR ASSISTANCE OR CARRIAGE RETURN TO CONTINUE.

IDENTIFICATION: XXXX

## **DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL**

**YOU HAVE JUST ENTERED INTO THE PROCESSOR AS:  
INSTALLATION - FORT CERL**

**PLEASE ENTER ONLY ONE FORM NUMBER AFTER EACH PROMPT.  
TYPE "END" WHEN FINISHED.**

**=>15279  
>END**

**PLEASE ENTER THE TEXTFIELDS YOU WISH TO DOWNLOAD, ONE FIELD OR  
A PAIR OF FIELDS SEPARATED BY A HYPHEN, PER LINE. ENTER "ALL"  
FOR ALL TEXTFIELDS. TYPE "END" TO FINISH.**

**=>ALL  
=>END**

**YOUR OUTPUT CONTAINS 20 LINES. WHERE DO YOU WANT  
TO STORE THIS DATA:**

- (1) OFFLINE STORAGE DEVICE**
- (2) DD1391 PERMANENT DISK**

**SELECT >1**

**TURN OFFLINE RECORD MODE ON. ENTER CARRIAGE RETURN TO  
CONTINUE**

**>**

**20 RECORDS WRITTEN TO OFFLINE DEVICE**

**15:53:30>**

### **7. TROUBLESHOOTING:**

### **8. ADDITIONAL REFERENCE: *DD Form 1391 Processor System Manual.***



## **DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL**

### **APPENDIX A:**

#### **FORMS INDEXED BY SOFTWARE REQUIREMENTS**

##### **CROSSTALK XVI**

- Form 7. Setting up CROSSTALK and CROSSTALK Scripts
- Form 11. Connecting to PAX Using CROSSTALK XVI
- Form 19. Uploading ASCII Files Using CROSSTALK XVI
- Form 20. Uploading LOTUS 123 SpreadSheet Files Using CROSSTALK XVI
- Form 21. Uploading WordPerfect Word Processing Files Using CROSSTALK XVI
- Form 22. Uploading Wordstar Word Processing Files Using CROSSTALK XVI
- Form 26. Capturing Screen Text Using CROSSTALK XVI
- Form 35. Editing a New DD Form 1391 Using a Personal Computer
- Form 36. Uploading a Form to the DD1391 Processor
- Form 37. Revising an Existing DD Form 1391 Using a Personal Computer

##### **ENABLE**

- Form 5. Saving an ENABLE File in ASCII Format
- Form 9. Creating an ENABLE Teleprocessing Setup for PAX
- Form 13. Connecting to PAX Using ENABLE
- Form 24. Uploading ASCII Text Files Using ENABLE
- Form 28. Capturing Screen Text Using ENABLE

##### **LOTUS 123**

- Form 1. Converting LOTUS 123 SpreadSheet Files to ASCII Format
- Form 6. Using LOTUS 123 and PC/FOCUS to Create Graphs on CAPCES Data
- Form 16. Uploading LOTUS 123 SpreadSheet Files Using SMARTCOM II
- Form 20. Uploading LOTUS 123 SpreadSheet Files Using CROSSTALK XVI

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### **PC/FOCUS**

- Form 3. Converting an ASCII Data Base to DIF Using PC/FOCUS
- Form 6. Using LOTUS 123 and PC/FOCUS to Create Graphs on CAPCES Data
- Form 14. Connecting to PAX Using PC/FOCUS
- Form 29. Downloading CAPCES Data Using PC/FOCUS

### **SMARTCOM II**

- Form 10. Connecting to PAX Using SMARTCOM II
- Form 15. Uploading ASCII Files Using SMARTCOM II
- Form 16. Uploading LOTUS 123 SpreadSheet Files Using SMARTCOM II
- Form 17. Uploading WordPerfect Word Processing Files Using SMARTCOM II
- Form 18. Uploading Wordstar Word Processing Files Using SMARTCOM II
- Form 25. Capturing Screen Text Using SMARTCOM II
- Form 35. Editing a New DD Form 1391 Using a Personal Computer
- Form 36. Uploading a Form to the DD1391 Processor
- Form 37. Revising an Existing DD Form 1391 Using a Personal Computer

### **Tym/COMM 3.0**

- Form 8. Setting up Tym/COMM and Tym/COMM Procedure Files
- Form 12. Connecting to PAX Using Tym/COMM 3.0
- Form 23. Uploading ASCII Files Using Tym/COMM 3.0
- Form 27. Downloading Files From PAX Using Tym/COMM 3.0

### **WordPerfect**

- Form 2. Converting WordPerfect Word Processing Files to ASCII Format
- Form 17. Uploading WordPerfect Word Processing Files Using SMARTCOM II
- Form 21. Uploading WordPerfect Word Processing Files Using CROSSTALK XVI

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**Form 35. Editing a New DD Form 1391 Using a Personal Computer**

**Form 37. Revising an Existing DD Form 1391 Using a Personal Computer**

### **Wordstar**

**Form 4. Creating an ASCII File Using Wordstar**

**Form 18. Uploading Wordstar Word Processing Files Using SMARTCOM II**

**Form 22. Uploading Wordstar Word Processing Files Using CROSSTALK XVI**

**Form 35. Editing a New DD Form 1391 Using a Personal Computer**

**Form 37. Revising an Existing DD Form 1391 Using a Personal Computer**

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### **APPENDIX B:**

#### **HARDWARE OVERVIEW: DESCRIPTION OF MICROCOMPUTER COMPONENTS**

##### **Central Processing Unit (CPU)**

The CPU, which is the heart of the machine, is the most important component in terms of performance and price. The CPU determines the speed at which the machine operates, the amount of information it can process, and the type of operating system it runs. The operating system is the software that controls the machine and all associated hardware.

The speed of the microprocessor is measured in megahertz (MHz). One megahertz is equal to one million cycles per second. Microcomputers generally operate between 4 and 15 MHz.

Microprocessors have a wide range of capabilities, the number of which is based on the instruction size of the microprocessor. Most microprocessors in microcomputers today are either 8- or 16-bit, which means they use either 8- or 16-bit instructions where a "bit" is one piece of information. In general, a 16-bit microprocessor is far more powerful than an 8-bit microprocessor. There are many popular 8-bit machines on the market, but the power required for most typical office automation and communication tasks often requires more memory and speed than the 8-bit microprocessors can provide. Examples of machines with 8-bit microprocessors are the Apple IIe, and the Commodore 64. These machines are not powerful enough for most applications within the Corps of Engineers (CE). Large spreadsheets and data bases require 16-bit microprocessors for acceptable operation. Because the 8-bit microprocessors cannot support this type of work efficiently, these machines are not recommended for large-scale CE applications.

The IBM PC compatibles and PC/AT compatibles are some of the most widely supported microcomputers used by Army engineers today. A tremendous base of software and hardware is available to run with these machines and any true "compatibles." The system is supported by training classes dealing with software for the IBM compatibles; in addition, many new applications are being developed for this system. For these reasons, the IBM compatible is the most highly recommended micro at this time for Army engineers.

IBM PC compatibility in its highest degree means that a system can run all programs that run on the IBM PC and use the same hardware. Some machines falling into this category are the AT&T 6300, Compaqs, certain Kaypro models, and many others. Essentially, having one of the true compatibles is equivalent to having an IBM PC or, in many cases, having a superior machine. For applications that require rapid handling of data, such as graphics and data bases, the IBM PC/AT compatible is recommended. AT compatibles include the ITT Xtra XP, the Compaq Deskpro 286, and the Kaypro 286i, among others. These machines run the common spreadsheets, data bases, communications, graphics, word processors, and utilities currently available for the IBM PC and AT.

The basic difference between the IBM PC or PC/XT and the IBM PC/AT is the microprocessor. The IBM PC and PC/XT use the Intel 8088 microprocessor, whereas the

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PC/AT uses the Intel 80286--a far more powerful, much faster microprocessor. This allows corresponding performance improvements in applications. The true AT compatible can run all IBM PC/AT software; it can also run most of the existing IBM PC software much faster than can the IBM PC.

Another common term is "coprocessor." A coprocessor is a special-purpose microprocessor designed to work in conjunction with the CPU in handling specific tasks, thereby providing faster computation or processing. For example, the IBM PC uses the 8088 chip for a CPU, but the 8088 chip is not designed to handle floating-point (or real number) arithmetic. However, the user can install the 8087 chip, which is a floating-point coprocessor. The 8087 chip can handle floating-point numbers up to 25 times faster than the 8088 because the 8088 needs software to handle the numbers whereas the 8087 does not. The math coprocessor that runs with the 80286 chip is the Intel 80287.

The 8088 and 80286 machines can communicate with various type of devices through ports. Parallel ports are very fast ports commonly used for printers. Serial ports are slower and are usually used for modems, plotters, mice, and other devices. The number of ports allowed is controlled by the hardware and operating system in use. MS-DOS allows only two parallel ports and two serial ports. These limitations are very restrictive for engineering applications on a micro. For instance, an engineer may wish to use a digitizer, plotter and modem on the same machine. Since these devices all require a serial port, they must be placed on a switching device or the engineer must swap connecting cables when changing tasks.

### **Memory**

This section discusses only one kind of memory--Random Access Memory (RAM)--which is "volatile" electronic memory. "Volatile" means the memory loses its data when turned off. The amount of RAM in the machine is very important for applications in that it determines the amount of work that can be done without requiring disk access. Electronic memory is many orders of magnitude faster than a disk, making RAM very desirable. Sometimes the machine can support only a fraction of its total memory allowance on its main system board. In this case, the user can purchase an add-on board with a memory option to give the machine more RAM.

Most 8-bit machines can support only up to 64 Kb of RAM, but the newer 16-bit microprocessors can support 1 Mb or more. This feature makes these 16-bit microprocessors extremely useful in graphics, for which huge amounts of high-speed memory are required, and with large spreadsheet models. Artificial intelligence systems and inference engines also require large amounts of memory.

The IBM compatibles usually allow at least 512 Kb of RAM to be loaded into the machine, although it may not all fit onto the main board, thus requiring an expansion board. 512 Kb is a good figure to work with. Many of these machines can have up to 640 Kb of RAM, and IBM PC/AT compatibles can have up to 3 Mb.

Systems also may have Read-Only Memory (ROM) which usually contains information the user never sees, such as machine instructions.

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### **Disk Storage**

Disks are commonly used for large-scale storage. They are nonvolatile and are handy for storing copies of documents and data bases, along with graphics, programs, and other types of information. The two most common types are hard disks and floppy disks. Most IBM compatibles are sold with a floppy disk and have a hard disk available as an option--usually in a configuration that allows both drives to be installed inside the computer. A hard disk is also known as a "fixed" disk or a "Winchester." Hard disks provide fairly fast access to data, but cannot replace RAM for several reasons. The most important limitation is that, while a program may be stored on the hard disk, to use that program, the computer must first load it into RAM before running it.

Hard disks become filled very quickly, even though they appear to be large. A hard disk should have at least 20 Mb of storage. Many IBMs and compatibles have 10-Mb of hard disks. If one of these models is chosen, it is wise to ensure that the system can accommodate another hard disk in the future. (This does not necessarily apply to a portable machine, which may not have room for a second hard disk.)

One other important consideration is that the computer can "boot" from the hard disk. That is, the computer should be able to start and load the operating system from the hard disk when turned on. The alternative is to boot from a floppy disk, which would require that the user always keep an operating system floppy. Floppy disk drives are much slower than a hard disk and have far less storage capabilities; however, they are useful for transferring data from one machine to another and for backing the hard disk. Another important consideration is that most commercial software comes on a floppy disk and must be copied onto the hard disk after purchase. This copying is not possible without a floppy drive. Some programs that use copy protection to prevent theft of software also require that the user have the original floppy disk in the drive so that the program can check whether it's the original. If not, the program stops and cannot be run.

The standard floppy drive for the IBM is 5.25 inches in diameter and holds 320 or 360 Kb. This standard size is known as a double-sided, double-density drive. The "format" is the way in which the sides are used and information is stored on the disk. Older floppy drives came in single-sided, single-density format, which holds only about 90 Kb of data--not enough to handle some of the common programs for the PC.

An alternative that is rising in popularity is the 3.5-inch disk. This disk holds 720 Kb and has a rigid plastic case, making it far less vulnerable to damage from smoke and dust than other disks. The only problem with this size disk is that very little software to date is available in this format; most software still is packaged in the 5.25-inch format. This situation is gradually changing, however.

### **Display**

Display resolution is very important. "Resolution" involves the number of dots comprising the screen. A two-number convention usually describes display resolution; for example, standard resolution for the IBM Color Monitor is 640x200, which means 640 "pixels" or dots horizontally and 200 vertically. This resolution is not adequate for many of the tasks performed on microcomputer workstations. Poor resolution causes eye strain during use of the computer due to the fuzziness and generally poor quality of text on the screen. A reasonable resolution is 640x400, which yields a much better screen for

## **DATA COMMUNICATIONS AND FILE MANAGEMENT MANUAL**

the computer operator. The typical IBM monochrome display and adapter can yield a resolution of around 700x300, with high-quality characters on the screen as a direct result.

Color can be an important aid in many applications, especially graphics. Text applications can take advantage of color to supply additional information to the user. It is a good idea to obtain as much color support as possible. Four colors are adequate but, generally speaking, the more the better. Some text applications can take advantage of 16 to 32 colors, or are configurable by the user to use any color requested. In these cases, it is the hardware that limits the usage. Both a color video board adapter and color monitor are required.

An important point is that the color board must be the "RGB" type, that is, it must supply separate red, green, and blue signals for the monitor. The monitor also must be compatible with the board; it must accept an RGB signal. The alternative for the RGB signal is the "composite video" signal, which does not support acceptable resolution. The resolution available from composite video allows 40 columns of text on the screen and 25 lines. This capability is unacceptable in a text-processing environment, where 80 columns are needed. An example of recommended high resolution for the B-4 IBM compatible is the Enhanced Graphics Adapter and Enhanced Graphics Monitor combination, which supports 640x350 in eight colors.

### **Printers**

Printers are the most common peripheral for output from the microcomputer. They provide the fastest output of all paper output devices available and have a wide variety of capabilities. While a monitor is necessary for rapid work on a micro, it is usually necessary to keep paper copies of data to pass on to other personnel or to file as "hardcopy." Most printers require that the CPU have a parallel port, which will be explained later in detail.

Printers are of two basic types: letter-quality and dot-matrix. Letter-quality printers tend to be slow and expensive, but produce exceptionally clear text--exactly like that using a typewriter. The most common letter-quality printers have a "Daisy Wheel," which looks like a small disk with spokes sticking out of its perimeter each of which has fully formed character stamps on it. This disk is mounted next to the platen of the printer and rotates to place the appropriate character in front of the paper, where a small hammer then strikes it. These printers are very noisy, sounding just like a very fast typist's office.

Dot-matrix printers are generally an order of magnitude faster than letter-quality printers but tend to produce lower quality output. They form characters by striking the ribbon with a number of very tiny pins as the print head passes over the paper, and the resultant text looks rough. Some printers have more of these little pins spaced closer together than for others, giving a print quality very near that of letter-quality printers. These printers are called "near-letter-quality." All dot-matrix printers are very noisy, sounding like a swarm of bees.

A variety of alternative technologies can produce output similar to these printers with less noise. One is the thermal printer, which burns the surface of the paper slightly, substituting tiny electrodes in place of the pins. Another is the ink-jet, which sprays tiny

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drops of ink onto the paper. A good example of an inexpensive ink-jet printer is the Hewlett Packard Thinkjet, which costs around \$500 and is very quiet. Another option is the laser printer. It is also quiet and exceptionally fast. Essentially, the laser is a very high-resolution dot-matrix printer, but uses a laser to write to a drum, which picks up toner and transfers the characters to paper, much like an office copier. This type of printer is very expensive, ranging from \$3500 for the Hewlett Packard Laserjet to over \$20,000. Although a laser printer does not fit everyone's needs, for those with very large printing requirements, this type can perform very nicely.

Printers are available in different widths, such as 9 and 17 inches. Army engineers will need the wide-body printers for CAPCES printouts. Large pictures also can be printed on the wide-body models.

### **Modems**

A modem is required at each end of a telephone line in order for two computers to communicate. A modem is a device that translates data from the computer into signals which can be transmitted over telephone lines and can retranslate these signals back into data. A modem requires a serial port on the microcomputer.

AT&T created a standard for telecommunications some years ago called the Bell 212-A standard, which describes exactly how the signals are to be sent. Most modems today adhere to this standard in the 110- to 1200-baud range. The speed of communications is limited by how fast the modem can transmit, the communications software capabilities, and the telephone line quality. Poor-quality telephone lines usually will not allow transmission rates above 300 baud. Older terminals and teletypes operated in the 110- to 300-baud range, but this rate is unacceptably slow for most of the communications performed by Army engineers. The main reason for having a 300-baud-capable modem is to handle situations for which higher speed communications are not supported.

A "smart" modem is one that can be programmed and detect dial tones, busy signals, etc. Smart modems have a set of commands that tells them to do activities such as dial, hang up, send break signals, and use touchtone or pulse dialing. "Autodial" describes the ability to dial a telephone number automatically. "Autoanswer" is the ability to answer the telephone line, detect what speed the caller is using on his/her modem, and adjust to it automatically.

Examples of modems are Hayes, Racal-Vadic, AT&T, and Rixon. Modems can be purchased in external form (a small box that sits on a corner of a desk or bookshelf or under a telephone) or internal form. The internal modem is an add-on board that has a modem attached. Internal modems are very important for portable computers but they occupy one of the user's serial ports permanently. This setup is usually acceptable for a portable system, but not necessarily for a desktop model for which a user may wish to use a mouse and plotter at the same time. Internal modems can dial-up almost any computer that has a modem, giving the user access to mainframes, minicomputers, and other micros. Additional capabilities include (1) allowing the user to dial-up his/her home office computer during travel, (2) file-sharing with other users, and (3) access to a bulletin board, which is a dial-up system for maintaining notes, announcements, programs and other helpful information for micro users.



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Higher speed modems are becoming available and may be considered for long-lead time purchases.

### **Add-on Boards**

Add-on boards, often called "multi-function" or "expansion" boards, allow the user to increase the capabilities of his/her system. Typical options include additional memory, serial ports, parallel ports, light pen ports, and battery-powered clocks.

Add-on boards are advantageous in that some of these options may not be available from the computer manufacturer, but another company can provide them at a reasonable price. Also, the multifunction boards can replace single-function boards to allow room for more boards and options in the CPU.

Another interesting type of board is the accelerator board. This board has its own CPU, which can absorb some of the workload from the machine's CPU. The user can run more than one task and complete tasks at much faster speeds than without the accelerator.

Networking boards also are available. These boards allow several microcomputers to be tied together so that users can share information and resources.

### **Other Peripherals**

Plotters provide color graphics output far superior to that of color printers; this better quality is necessary for architectural and engineering drawings. Plotters are manufactured in various sizes and often are reasonably priced compared with other color output devices. However, special software packages are required to drive plotters. Hewlett Packard and Gould are examples of plotter manufacturers.

"Mice" are small desktop objects with either wheels or optical sensors underneath to detect motion. When moved around the desktop, they send information to the computer which then can move objects around on the screen in coordinated action. Many graphics packages can use the mouse to allow interactive drawing on the display.

Digitizers are also available which allow the user to enter physical coordinates in a way similar to the mouse's operation. These include very large tablets with mechanical arms to detect relative motion and position, pen-shaped objects that work on special tablets, and others.

Surge protectors and radio frequency interference (RFI) filters should be considered mandatory for microcomputers. A surge protector is a device that prevents power line surges from reaching the computer, thereby protecting the sensitive components from lightning strikes and other surge sources. RFI filters help prevent spurious noise from causing data loss or destruction in the computer's RAM while programs are running. Several vendors supply surge protectors with built-in RFI filters.

Tape backup systems are valuable in that they allow high-speed backup of the hard disk. The standard backup for most PCs is the floppy disk, which requires swapping in and out approximately 30 floppies for each 10 Mb used on the hard disk. This backup

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method can become very tedious because someone has to be present at all times to continue the process. Backing up the hard disk is very important, but if the job is cumbersome, the user is less likely to do it at regular intervals. Tape drives can alleviate the tedium, making it more likely that the user will perform backups. A typical 10-Mb tape can be filled and checked for errors in about 15 minutes, which means an entire 20-Mb hard disk backup takes less than 30 minutes. These systems usually do not require someone's presence to monitor them except to change tapes. Tape backups of selected files or directories can be done easily with the available tape-drive systems. Compaq, for instance, has a tape drive available in its PC and AT compatible machines, and supplies a program that does all of this housekeeping effectively.

### **Operating Systems**

In the 1970s, CP/M was the dominant operating system for micros. With the advent of the IBM/PC, CP/M was replaced by PC/MS-DOS. In the last few years, it has been considered expedient to purchase hardware and software that use the IBM compatible operating systems because most of the state-of-the-art software has been written for the PC/MS-DOS operating system.

As technology progresses, PC/MS-DOS may evolve and keep pace with advancements or be replaced by a new system. The multiuser version of the Intel 310 does not use PC/MS-DOS, but instead employs the Xenix version of the Unix operating system.

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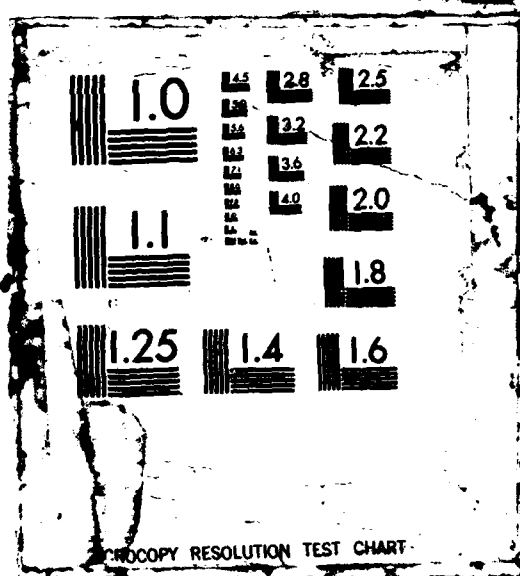
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